

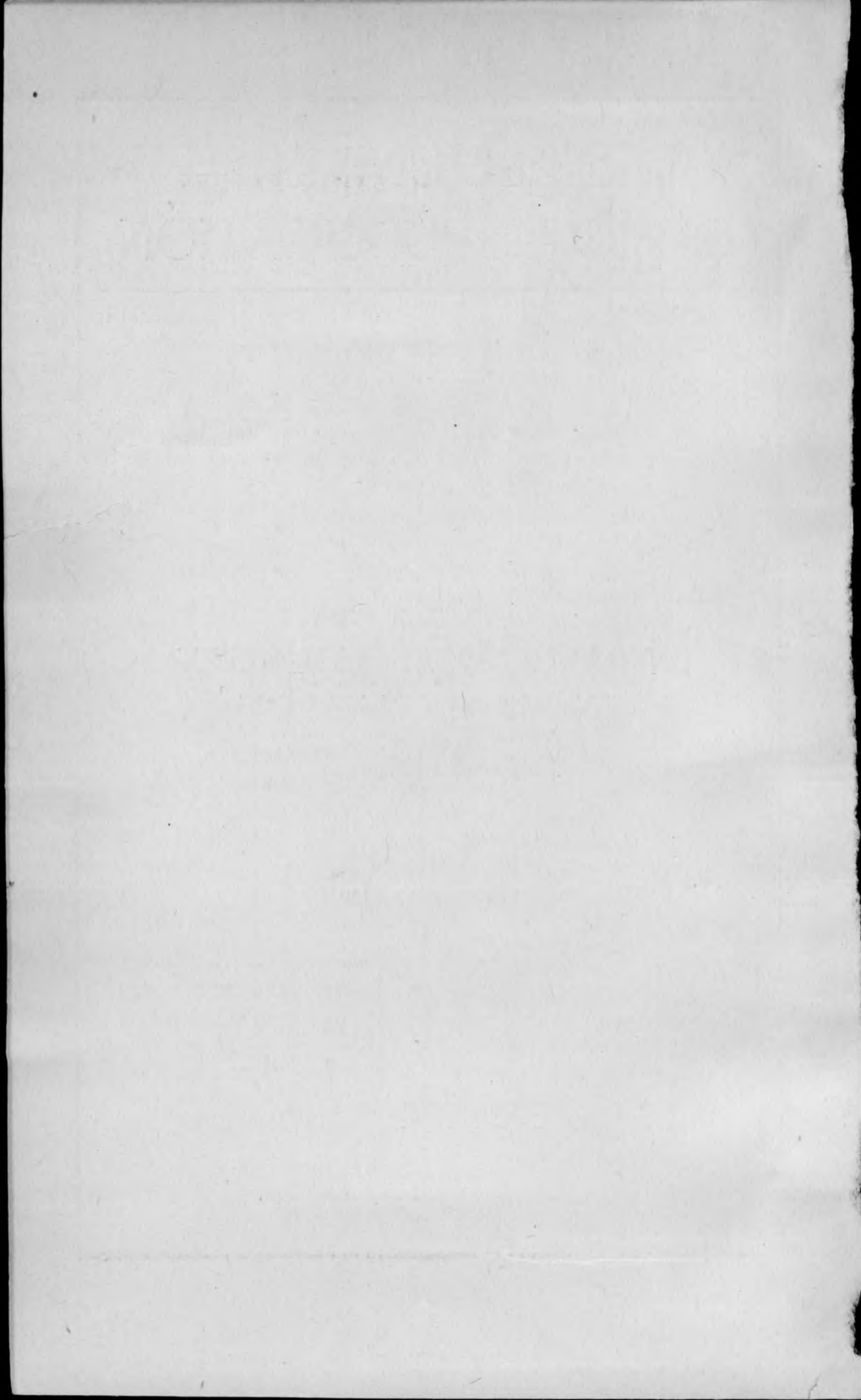
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SAMPLES OF ENTRANCE AND SCHOLARSHIP EXAMINATION PAPERS 1919

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ENTRANCE EXAMINATION PAPERS

ENGLISH I

I.

Selecting topics from the list below, write two compositions, one an exposition of about 300 words, the other a narrative or a description of about 200 words. In each case select the topic about which you feel that you can write most definitely; plan carefully; allow time for revision before handing in your paper.

- a. Explanation of a familiar proverb.
- b. A legend of my native town.
- c. Changes in the map of Europe.
- d. Community singing.
- e. The monks.
- f. Our high school museum.
- g. Morning versus evening newspapers.
- h. The maritime interests of the United States.
- i. A recent anniversary.
- j. Signs of good luck.
- k. A hero of fiction as I have pictured him to myself.
- l. On saving daylight.
- m. On going barefoot.
- n. On collecting botanical (or geological) specimens.
- o. The effect of the war on scientific study.

II.

"I laughed at Reynal for his *credulity*, went over to my *host's* lodge, took down my rifle, walked out *a mile or two* on the prairie, saw an old bull *standing* alone, crawled up a ravine, shot him, and saw him escape."

In this sentence: explain the meaning of *credulity*; explain the grammatical relation of *host's*, *a mile or two*, *standing*; make a list of the adjectives, the phrases, the independent clauses.

ENGLISH II

Group I. Drama

[Answer one question in each group]

1. Trace the changes in Lady Macbeth between her first appearance in the play and her last.
2. Discuss the importance of Cassius in the plot of *Julius Caesar*. Might any other character have served in his place? Why?
3. Explain the relations of Hamlet with Laertes, Polonius, Guildenstern, Gertrude. How are these relations made apparent in the play?
4. Have Shakespeare's plays any interest for you other than that in plot and in character? Explain, with specific reference to at least one tragedy and one comedy.

Group II. Poetry

1. What companions in *L'Allegro* does Milton summon along with Mirth? Enumerate the "unreproved pleasures" which the poet seeks with Mirth.
2. "But now the whole Round Table is dissolved
"Which was an image of the Mighty World."
What was the Round Table? How was it dissolved? What does the second line mean?
3. What is meant by lyric poetry? Mention a lyric by Wordsworth, by Shelley, by Keats. State briefly and definitely the principal theme of each.

Group III. Oratory

1. What is meant by copyright? What was the occasion of Macaulay's speeches on copyright? What were Macaulay's chief contentions?

2. "I am resolved this day to have nothing to do with the question of the right of taxation." Explain fully the import of this sentence from Burke's speech. What question was Burke's real concern?

3. Drawing material from Washington's *Farewell Address* and Webster's *Bunker Hill Oration*, make a comparison of the American Revolution with revolutions elsewhere.

Group IV. Essays

1. What was Carlyle's opinion of Burns's songs? Is that opinion sound? Explain.

2. Give an account of Dr. Johnson's later life: his employments, associations, reputation.

3. Explain Emerson's conception of *society*, of *manners*, of *gentleman*, of *success*.

Group V. General

1. Identify, each in one or two sentences, any ten of the following: James Boswell, Sidney Carton, Joshua, Frances Burney, John Keats, John Ruskin, John Tyler, John Silver, Dr. Primrose, Henry Esmond, Lemuel Gulliver, Touchstone, Hector, Uriah Heep, Hepzibah Pyncheon, Alexander Pope.

GREEK

A

Translation from the Anabasis, II, 3, 18:

Ἐγὼ ὦ ἄνδρες Ἕλληνες, γείτων οἰκῶ τῇ Ἑλλάδι, καὶ ἐπεὶ ὑμᾶς	1
εἶδον εἰς πολλὰ κάμηχана πεπτωκότας, εὔρημα ἐποιησάμην εἰ πως	2
δυναίμην παρὰ βασιλέως αἰτήσασθαι δοῦναι ἐμοὶ ἀποσῶσαι ὑμᾶς εἰς	3
τὴν Ἑλλάδα. οἶμαι γὰρ ἂν οὐκ ἀχαρίστως μοι ἔχειν οὔτε πρὸς ὑμῶν	4
οὔτε πρὸς τῆς πάσης Ἑλλάδος. ταῦτα δὲ γνοὺς ἡτοῦμην βασιλεύα,	5

λέγων αὐτῷ ὅτι δικαίως ἂν μοι χαρίζοιτο, ὅτι αὐτῷ Κῦρόν τε ἐπι- 6
 στρατεύοντα πρῶτος ἡγγεिला καὶ βοήθειαν ἔχων ἅμα τῇ ἀγγελίᾳ 7
 ἀφικόμην, καὶ μόνος τῶν κατὰ τοὺς Ἑλλήνας τεταγμένων οὐκ 8
 ἔφυγον, ἀλλὰ διήλασα καὶ συνέμξα βασιλεῖ ἐν τῷ ὑμετέρῳ στρατο- 9
 πέδῳ, ἔνθα βασιλεὺς ἀφίκετο, ἐπεὶ Κῦρον ἀπέκτεινε, καὶ τοὺς σὺν 10
 Κίρῳ βαρβάρους ἐδίωξα σὺν τοῖσδε τοῖς παροῦσι νῦν μετ' ἐμοῦ, 11
 οἵπερ αὐτῷ εἰσι πιστότατοι. 12

1. Write out the declension with accents of *εὐρημα* (2), *πάσης* (5), and *βοήθειαν* (7).

2. Write the principal parts of the verbs *πεπτωκότας* (2), *δυναίμην* (3), *δοῦναι* (3), *γνοῦς* (5), *ἀφικόμην* (8), and a synopsis of the pres. act. of *ἵστημι*.

3. Explain the construction of *ἂν* in lines (4) and (6), and of *χαρίζοιτο* (6).

B

Translation into Greek:

Calling the soldiers together he spoke as follows: It is plain to all, men, that we cannot remain here; for we have no provisions. But if we try to go back home, we shall have to fight the king's forces every day. If on-the-other-hand we advance, who will there be to lead us? For not only Cyrus is dead, but the most competent generals.

C

HOMER

Translate:

ὥς ἄρα φωνήσας ἀπεβήσето, τὸν δὲ λίπ' αὐτοῦ 1
 τὰ φρονέοντ' ἀνὰ θυμὸν ἃ ῥ' οὐ τελέεσθαι ἔμελλον. 2
 φῆ γὰρ ὁ γ' αἰρήσειν Πριάμον πόλιν ἡματι κείνῳ, 3
 νήπιος, οὐδὲ τὰ ἦδη, ἃ ῥα Ζεὺς μῆδετο ἔργα. 4
 θήσειν γὰρ ἔτ' ἔμελλον ἐπ' ἄλγεά τε στοναχάς τε 5
 Τρωσὶ τε καὶ Δαναοῖσι διὰ κρατερὰς ὑσμίνας 6
 ἔγρετο δ' ἐξ ὕπνου. θείῃ δέ μιν ἀμφέχυντ' ὀμφή. 7
 ἔξετο δ' ὀρθωθείς, μαλακὸν δ' ἐνδυνε χιτῶνα, 8

καλὸν νηγάτεον, περὶ δὲ μέγα βάλλετο φᾶρος·	9
ποσσὶ δ' ὑπὸ λιπαροῖσιν ἐδήσατο καλὰ πέδιλα,	10
ἄμφι δ' ἄρ' ὤμοισιν βάλετο ξίφος ἀργυρόηλον·	11
εἴλετο δὲ σκῆπτρον πατρώιον, ἄφθιτον αἰεὶ·	12
σὺν τῷ ἔβη κατὰ νῆας Ἀχαιῶν χαλκοχιτώνων.	13

1. What is the difference between the Homeric and the Attic use of the "article"? Illustrate from this passage.
2. What is *tnesis*? Give an illustration.
3. Locate the following forms: φῆ (line 3), ἦδη (4), βάλλετο (9), βάλετο (11).
4. Indicate the quantity of each syllable in verse 4 with the reason for each.
5. What is caesura? State where it should come in each of the first six verses of this extract.

LATIN

I

FIRST YEAR LATIN

1. Write the genitive and ablative singular and the genitive and accusative plural of: *vicus, genus, tempus, adventus, jus, servitus, valles, acies, dives, pes, miles, obses, nomen, frater, ager, iter, ego, se*, neuters of *iste, ipse* and *hic*, feminines of *solus, is, idem* and *ille*.
2. Give the positive, comparative, and superlative degrees of the adverbs derived from *aeger, sapiens, acer, bonus*.
3. Give a synopsis in the second person plural (indicative and subjunctive, active and passive) of: *cogo; moveo*.
4. Give the principal parts of: *gero, cupio, jacio, rapio, fluo, pello*.
5. How do *nonne, num, -ne, an*, and *utrum* differ in use?—How does the interrogative *quod* differ in use from the interrogative *quid*?—How does *tam* differ in use from

ita and *sic*? *Ne* from *ut non*?—*Si* with the present subjunctive from *si* with the imperfect subjunctive?

6. Translate into Latin, marking all long vowels in what you write :

(a) Did not the Romans believe that there were many gods?

(b) Tell me who of these boys is most skillful.

(c) If the soldiers had been brave, they would have been praised.

(d) When the farmers had brought the grain from the country, they sent it to Rome.

(e) When they had gone three miles, they decided to return home.

(f) After reading the letter, I persuaded the messenger not to return.

(g) The scouts will be sent to find out how deep the river is.

(h) Peace is better than war.

7. Translate :

Eodem die castra promovit et *milibus passuum* sex a Cæsaris castris sub monte consedit. Postridie ejus *diei* præter castra Cæsaris suas copias transduxit et milibus passuum duobus ultra eum castra fecit, eo *consilio*, uti frumento *commeatuque*, qui ex Sequanis et Æduis *supportaretur*, Cæsarem *intercluderet*. Ex eo die *dies* continuos quinque Cæsar pro castris suas copias produxit et aciem instructam habuit, ut, si *vellet* Ariovistus prælio contendere, ei potestas non *deesset*. Ariovistus his omnibus diebus exercitum castris continuit ; equestri *prælio* cotidie contendit.

Account for the construction of each italicized word in the above passage.

II

SECOND YEAR LATIN

1-6. Answer 1, 2, 3, 4, 5 and 6 under First Year Latin (above).

7. *Translate :*

Cæsar, postquam per Ubios exploratores comperit *Suevos sese* in silvas *recepisse*, inopiam frumenti veritus, quod, ut supra demonstravimus, minime omnes Germani agriculturæ student, constituit non progredi longius : sed ne omnino metum reditus sui barbaris *tolleret* atque ut eorum auxilia tardaret, reducto *exercitu*, *partem* ultimam pontis, quæ ripas Ubiorum contingebat, in longitudinem *pedum* ducentorum rescindit ; atque in extremo ponte turrim tabulatorum quatuor constituit præsidiumque cohortium duodecim *pontis tuendi* causa ponit magnisque eum locum munitionibus firmat.

Account for the mood and tense of each italicized verb and for the case of each italicized noun or pronoun in this passage.

III

THIRD YEAR LATIN

1-4. Answer questions 1, 2, 3, 4 and 5 under First Year Latin.

6. *Translate :*

(a) At enim vir clarissimus, amantissimus rei publicæ, vestris beneficiis amplissimis affectus, Q. Catulus, itemque summis ornamentis honoris, fortunæ, virtutis, ingeni præditus, Q. Hortensius, ab hac ratione dissentiunt : quorum ego auctoritatem apud vos multis locis plurimum valuisse et *valere* oportere confiteor, sed in hac causa, tametsi cognoscetis auctoritates contrarias virorum fortissimorum et clarissimorum, tamen omissis auctoritatibus ipsa re ac ratione exquirere possumus veritatem, atque *hoc* facilius, quod *ea* omnia, quæ a me adhuc dicta sunt, iidem isti vera esse concedunt, et necessarium bellum esse et magnum et in uno Cn. Pompeio summa esse omnia.

(b) His ego sanctissimis rei publicæ vocibus et eorum hominum, qui hoc idem sentiunt, mentibus pauca respondebo : ego, si hoc optimum *factu* judicarem, patres

conscripti, Catilinam morte *multari*, unius usuram horae gladiatori isti ad vivendum non *dedissem*; etenim si summi et clarissimi viri Saturnini et Gracchorum et Flacci et superiorum complurium sanguine non modo se non contaminarunt, sed etiam honestarunt, certe verendum mihi non erat ne quid hoc parricida civium interfecto *invidiae* mihi in posteritatem redundaret.

Account for the mood and tense of each italicized verb and for the case of each italicized noun or pronoun in both of these passages.

7. *Translate into Latin, marking all long vowels in what you write:*

(a) A few years before many states had been ruined by the Romans.

(b) It is to the interest of our allies that we put a brave man in charge of the war.

(c) Are you not ashamed of what you have done.

(d) There were many great Roman generals whose deeds of valor were remarkable. They fought not for the sake of saving themselves, but to free their country from danger and we ought to regard them as worthy of exceptional honor. But Cicero must be placed before them all.

(e) He ordered the soldiers not to destroy the town.

IV

FOURTH YEAR LATIN

1. *Translate:*

- (a) Tendunt vela Noti; fugimus spumantibus undis,
 Qua cursum ventusque gubernatorque vocabat.
 Jam medio apparent fluctu nemorosa Zacynthos,
 Dulichiumque, Sameque, et Neritos ardua saxis.
 Effugimus scopulos Ithacae, Laërtia regna,
 Et terram altricem saevi exsecramur Ulixi.
 Mox et Leucatae nimbose *cacumina* montis,
 Et formidatus *nautis* aperitur Apollo.

Hunc petimus fessi, et parvae succedimus *urbi*;
Ancora de prora jacitur, stant litore puppes.

- (b) Tum vero Aeneas, subitis exterritus umbris,
Corripit e somno corpus sociosque fatigat :
“ *Praecipites* vigilate, viri, et considite transtris ;
Solvite vela citi ! Deus aethere missus ab alto
Festinare fugam tortosque incidere funes
Ecce iterum stimulat. Sequimur te, sancte deorum,
Quisquis es, imperioque iterum paremus ovantes.
Adsis o placidusque juves, et sidera *caelo*
Dextra feras.” Dixit, vaginaque eripit ensem
Fulmineum, strictoque ferit retinacula ferro.
Idem omnes simul ardor habet, rapiuntque ruuntque ;
Litora deseruere ; latet sub classibus aequor ;
Annixi torquent spumas et caerula verrunt.

Account for the construction of each italicized word in these passages.

From what book of the Aeneid is each of these passages taken? Write briefly on the contents of the first book of the Aeneid?

Write out the first three lines of the last passage, indicating the metrical feet, the principal caesura and the length of each syllable.

Who was Minos? Phoebus? Agamemnon? Ascanius? Aurora? Laertes? Laocoon? Sinon?

2. When did Vergil live? What was his main motive in writing the Aeneid?

3. Write the principal parts of *fugimus*, *apparet*, *aperitur*, *petimus*, *jacitur*, *corripit*, *solvite*, *tortos*, *sequimur*, *es*, *juves*, *feras*.

4. Write the genitive and ablative singular and the genitive and accusative plural of: *cacumina*, *Apollo*, *litore*, *Aeneas*, *quisquis*, *sidera*, *aequor*.

FIRST YEAR GERMAN

N.B. State where and when you have studied German.

PART ONE

Oral Examination (One hour)

PART TWO

Written Examination (Two hours)

I

Translate into English :

Einem reichen Manne, dem wurde seine Frau krank, und als sie fühlte, daß ihr Ende herankam, rief sie ihr einziges Töchterlein zu sich ans Bett und sprach: „Liebes Kind, bleib fromm und gut, so wird dir der liebe Gott immer beistehen, und ich will vom
5 Himmel auf dich herabblicken und will um dich sein.“ Darauf tat sie die Augen zu und verschied. Das Mädchen ging jeden Tag hinans zu dem Grabe der Mutter und weinte und blieb fromm und gut. Als der Winter kam, deckte der Schnee ein weißes Tüchlein auf das Grab, und als die Sonne im Frühjahr
10 es wieder herabgezogen hatte, nahm sich der Mann eine andere Frau.

Die Frau hatte zwei Töchter mit ins Haus gebracht, die schön und weiß von Angesicht waren, aber schwarz von Herzen. Da ging eine schlimme Zeit für das arme Stiefkind an. „Soll die
15 dumme Gans bei uns in der Stube sitzen!“ sprachen sie, „wer Brot essen will, muß es verdienen; hinaus mit der Küchenmagd.“ Sie nahmen ihm seine schönen Kleider weg, zogen ihm einen grauen alten Kittel an und gaben ihm hölzerne Schuhe. „Seht einmal die stolze Prinzessin, wie sie gepuzt ist!“ riefen sie,
20 lachten und führten es in die Küche.

II

1. Give the principal parts with the auxiliary of the perfect tense and the third person singular, present indicative

(model : *weggehen*, *ging weg*, *ist weggegangen*, *geht weg*)
 of : *herankam* (line 2), *rief* (2), *sprach* (3), *beistehen* (4),
tat - - - *zu* (6), *verschied* (6), *herabgezogen* (10), *gebracht*
 (12), *sitzen* (15), *essen* (16), *nahmen* - - - *weg* (17)

2. Decline in singular and plural : *der sehr reiche, alte Herr, unser kleines Buch, diese schöne Stadt.*

3. Conjugate in present and imperfect, indicative and subjunctive : *werfen, können, wissen.*

4. Illustrate three different kinds of word order in three German sentences using the verb *aufstehen*.

III

Translate into German :

1. In the other room was a large table with several books upon it.

2. Of what were you speaking? Of the old lady whose son called on me two weeks ago.

3. Ithaca is the most beautiful city in the state of New York. It is most beautiful here in June.

4. If I had seen him yesterday, I should have given him the money.

5. He has never been able to sing as well as his friend.

6. He said that he had been ill and that he had had no time to see them.

SECOND YEAR GERMAN

N.B. State where and how long you have studied German.

PART I. *Oral Examination (one hour).*

PART II. *Written Examination (two hours).*

I.

Translate into English :

Ein reicher, aber geiziger Mann hatte eine beträchtliche Summe Geld, welches in ein Tuch eingenäht war, verloren. Er machte seinen Verlust bekannt und versprach dem ehrlichen Finder eine

- Belohnung, und zwar von hundert Talern. Bald kam ein
 5 guter und ehrlicher Mann und sagte: „Dein Geld hab' ich gefunden. Dies wird's wohl sein! Nimm dein Eigentum zurück.“ Der andere machte zuerst ein fröhliches Gesicht und fing an das Geld zu zählen, dachte aber unterdessen geschwind nach, wie er den Finder um seine Belohnung bringen könnte.
 10 „Guter Freund,“ sprach er hierauf, „es waren eigentlich 800 Taler in dem Tuch eingenäht. Ich finde aber nur noch 700 Taler. Du hast also wohl deine Belohnung von 100 Talern schon herausgenommen.“ Der Finder aber versicherte, daß er das Päckchen bringe, wie er's gefunden habe, ohne etwas heraus-
 15 genommen zu haben. Am Ende kamen sie vor den Richter. Beide bestanden auch hier noch auf ihrer Behauptung. Da war guter Rat teuer. Der kluge Richter aber, der die Ehrlichkeit des einen und den Geiz des andern im voraus kannte, griff die Sache auf die folgende Weise an. Er ließ sich von beiden über
 20 das, was sie sagten, eine feierliche Versicherung geben und tat darauf diesen Ausspruch: „Wenn der eine von euch 800 Taler verloren, der andere aber nur ein Päckchen mit 700 Talern gefunden hat, so kann auch das Geld, das dieser gefunden hat, nicht das nämliche sein, das jener verloren hat. Du, ehrlicher
 25 Freund, nimmst also das Geld, das du gefunden hast, wieder zurück und behältst es, bis der kommt, welcher nur 700 Taler verloren hat. Und du, der 800 Taler verloren hat, habe du Geduld, bis derjenige sich meldet, der deine 800 Taler findet.“ So sprach der Richter, und dabei blieb es.

II.

1. Decline in both numbers: *guter Freund* (l. 10), *der kluge Richter* (l. 17), *die folgende Weise* (l. 19).

2. Give principal parts, perfect tense with auxiliary, and the present indicative active third person singular of the following verbs (model: *weggehen*, *ging weg*, *ist weggegangen*, *geht weg*): *verloren* (l. 2), *versprach* (l. 3), *gefunden* (l. 6), *fing an* (l. 8), *herausgenommen* (l. 13), *versicherte* (l. 13), *kannte* (l. 18), *liesz* (l. 19).

3. Inflect in the mood and tense in which they are found : *nimmst* (l. 25), *habe* (l. 27), *sich meldet* (l. 28), *sprach* (l. 29).

4. Change into indirect discourse the two sentences beginning "*es waren eigentlich*" (l. 10) to "*schon herausgenommen*" (l. 13).

III.

Translate into German : 1. The dishonest man said, that he had lost eight hundred dollars. 2. Did he really lose eight hundred dollars? 3. The honest man found seven hundred dollars sewed in cloth. 4. Who got the money? 5. Did the judge give the money to the dishonest man? 6. What did he say to the man who found the money, and to the man who had lost it? 7. Do you think that the judge was right? 8. If the man had not been avaricious, he would have received his money.

THIRD YEAR GERMAN

PART I. *Oral Examination (One hour)*

PART II. *Written Examination (Two hours)*

I.

Translate into English :

Am nächsten Morgen war in der Pastorswohnung schon vor Sonnenaufgang Alles in der muntersten Bewegung. Das Frühstück wurde eilig und kaum zur Hälfte verzehrt; und als der Pastor Hut und Stoc nahm und das Zeichen zum Aufbruch geben wollte, fand er die ganze Gesellschaft schon vor der Haustür. Den Vater begleiteten die älteren Töchter und Fritz; Gertrud und Anna erwarteten mit Ungebuld den Wagen, der gegen sechs Uhr aus der Stadt kommen sollte, um den Großvater und die Pastorin nach dem Landgut der Freunde zu bringen, wo man bis Mittag bleiben wollte. Freilich wären auch die beiden Kleinen lieber mit den älteren Geschwistern zu Fuß gegangen,

- aber nur weil diese früher aufbrachen; denn als sie erst auf den bequemen Polstern des Wagens saßen und Bäume, Häuser und Felder an ihnen vorbeislogen, da jubelten sie und freuten sich,
- 15 daß es so schnell ging. Erst hinter der Brücke holte man die Fußgänger ein, da diese den viel kürzeren Pfad durch den Wald benutzt hatten. Der Wagen mußte halten, und Alle begrüßten sich mit einer Freude, als hätten sie sich, wer weiß, wie lange, nicht gesehen. Gertrud und Anna bestanden darauf, aussteigen
- 20 zu dürfen, um, an den Händen des Vaters hängend, diesem zu erzählen, was für Merkwürdigkeiten sie schon auf der Reise erlebt hätten, wie der Wagen durch eine große Herde Rüge aufgehalten worden sei und wie später ein richtiger Hase vor ihnen über die Straße gesetzt sei, um sich dann wirklich und wahrhaftig ganz
- 25 ruhig nach ihnen umzusehen, gerade als ob er gemerkt habe, daß von ihnen keine Gefahr zu beforgen sei.

II.

Grammatical questions based on the preceding passage.

1. Give the principal parts, with the auxiliary of the perfect tense, and the third person singular present indicative (model: *weggehen, ging weg, ist weggegangen, geht weg*) of the following verbs: *nahm* (4), *bringen* (9), *saszen* (13), *vorbeislogen* (14), *aussteigen* (19), *aufgehalten* (22).

2. Give, with the definite article in each case, the nominative and genitive singular, and the nominative plural of: *Gesellschaft* (5), *Stadt* (8), *Felder* (14), *Händen* (20), *Merkwürdigkeiten* (21), *Strasze* (24).

3. Decline in German throughout the singular only: *an old man*; throughout the plural only: *young children*; throughout the singular and plural; *the new book*.

III.

Translate into German:

A. Do you know the old gentleman who lives in that little house under the trees?

B. I know who he is and I have heard my parents speak of him. Why do you ask? Are you personally acquainted with him?

A. No, not yet but I must call on (= visit) him very soon. My grandfather in Indiana with whom I spent the summer told me that he had often met him fifty years ago when they were at (*in*) Harvard together.

B. And have they not seen each other since that time?

A. Once or twice, I believe, during the first twenty years after they left the university. But my grandfather hopes to renew (*erneuern*) the old acquaintance next winter when (*wo*) he intends to visit us here. He would not have come so soon if we were not now living in the same town as his friend.

IV.

Write to an intimate friend, using the pronoun *du*, a German note of about 50 words stating that you cannot lend him or her the book again which he or she had borrowed from you once before because you will have to use it in Cornell as you have been told by one of the professors. Date, address, and sign the letter properly.

FIRST YEAR FRENCH

Part I. (one hour)

Oral and Aural Examination

Part II (two hours)

I. *Translate:*

Pour terminer ce long et grave discours, faisons ensemble des souhaits, j'allais dire, prions ensemble. Que la France demeure forte parmi les nations. Qu'elle soit forte par sa justice. Que, par sa justice, elle détruise en elle toutes les injustices qui ne sont pas fatales, et qu'elle adoucisse les

autres ; que ses lois démocratiques élèvent à la fin tous les Français jusqu' à la dignité d'hommes, où un si grand nombre d'entre nous ne sont point parvenus encore. Qu'elle soit forte par sa liberté. Que la République persévère, inflexible, à retirer toute autorité publique aux puissances du passé, mais que, par elle, aucune conscience ne soit offensée dans sa foi religieuse, car l'expérience a démontré que ces offenses font cruellement souffrir. Que, par l'effet de la justice et la liberté, la patrie soit le bien de tous, aucun Français ne se sentant dédaigné, aucun Français ne se sentant meurtre. Que la République soit forte par les armes, car si elle laissait tomber son armure, elle n'aurait pas de mérite à prêcher la paix dont elle aurait un besoin trop manifeste, et les peuples lui répondraient ce que répondirent un jour les renards au discours du renard qui s'était laissé prendre à un piège. Qu'en attendant le jour, dont nous ne pouvons même imaginer la date, où les peuples mettront en un faisceau tous les étendards, et, après avoir salué une dernière fois ces vénérés symboles, les brûleront en un feu de joie, le drapeau de la France flotte haut dans le ciel, car il ne porte pas de monogramme, ni d'écusson, ni de bête héraldique ; il n'appartient ni à un homme, ni à une maison ; il appartient à un peuple libre, respectueux de la liberté d'autrui, et voulant cette liberté ; et s'il s'affaissait, on verrait s'allonger sur la terre l'ombre des aigles bicéphales.

Que les Français demeurent avant-garde, et fiers de l'honneur mais aussi conscients du péril, et, par ce double sentiment, indissolublement unis : ils conduisent la marche difficile vers la paix lointaine que nous donnera la future sagesse internationale.

ERNEST LAVISSE, *Discours*.

II. Give the plural of *œil*, *ciel*, *ai eul*. Write a list of the possessive pronouns. Conjugate the present indicative of *envoyer*, the imperfect indicative of *savoir*, the future of *vouloir*, the conditional of *être*, the past definite of *lire*, the

past indefinite of *mourir*, the present subjunctive of *aller*, the imperfect subjunctive of *prendre*.

III. *Translate :*

Do not give them your French grammar. If it rains to-morrow we shall not go. This room is smaller than that one. His mother was French but his father was English. He will leave New York November 11, 1918, and will return in December. She would sing every morning. Is your sister at home now? Will you have some milk? Yes, but no cream. I have two sisters and he has three.

SECOND YEAR FRENCH

Part I (one hour)

Oral and aural examination

Part II (two hours)

Translate : On s'est *aperçu* pendant la guerre, que, lorsqu'on voulait intéresser les étrangers à la France, ce n'était pas de son commerce ni de son industrie qu'il fallait leur parler, mais de ses arts. Les étrangers, en effet, ont la faiblesse d'estimer que la France est encore plus remarquable par ses artistes que par ses commerçants et ses industriels. Alors, chaque fois que nous avons voulu *plaire* en pays neutre, étaler nos charmes, *séduire*, montrer enfin qu'il y avait encore chez nous de la vie, que le génie n'avait pas disparu, nous avons organisé des expositions de peinture et des tournées théâtrales. Moyen infaillible... Que ce soit en Suisse, en Espagne, en Hollande, ou dans les contrées du Nord, il a partout donné des résultats.

Voilà, semble-t-il, qui pourrait peut-être bien nous *servir* de leçon. Est-ce que nous ne devrions pas commencer à considérer avec un peu d'estime et de reconnaissance, des gens qui nous valent précisément l'amitié de l'étranger?

Les poètes, les écrivains, les peintres, les musiciens... il serait juste d'honorer chez nous ceux-là qu'honorent les autres.

Cependant je doute qu'on y *songe*, et quand, par exemple, je lis les plans de toutes les personnes qui méditent de réformer et de reconstituer la France, je ne trouve rien qui ressemble à l'hommage que je voudrais voir rendre à nos artistes et à nos poètes. Les malheureux sont oubliés. Hélas ! ils demeurent en-dessous des spéculations sublimes de nos grands économistes !

II. Give the principal parts of the verbs in italics in the passage above. Conjugate the imperfect subjunctive of *avoir* ; the future perfect of *venir* ; the imperfect indicative of *finir* ; the conditional of *aller*.

III. 1. Even if I knew the answer, I would not tell it to you.

2. I used to see her Mondays, at the home of some neighbors.

3. There is no instrument which pleases me as much as the piano.

4. She would have sat down, if there had been any chairs in the room.

5. We must hurry, or we shall miss the 12 o'clock train.

6. She is taller than you thought, isn't she ?

7. I would have spoken to you about it, if I had thought of it.

8. It is unfortunate that you arrived so late.

9. Do you think that it is possible that it will be cold to-morrow ?

10. Here are John and Mary ; the former is a friend of mine, the latter of my sister.

11. They have been here since a week ago yesterday.

12. I do not think that you are right.

IV. Write a composition in French of about one hundred words on one of the following subjects :

- (a) Une fête dans une ville américaine.
- (b) La Fayette et L'Amérique.

THIRD YEAR FRENCH

Part I (one hour)

Oral and aural examination

Part II (two hours)

Translate : "Jean-Marie," he said very gravely, "this world is exceedingly vast ; and even France, which is only a small corner of it, is a great place for a little lad like you. Unfortunately it is full of eager, shouldering people moving on ; and there are very few bakers' shops for so many eaters. Your master is dead ; you are not fit to gain a living by yourself ; you do not wish to steal ? No. Your situation then is undesirable ? It is for the moment critical. On the other hand, you behold in me a man not old, though elderly, still enjoying the youth of the heart and intelligence ; a man of instruction ; easily situated in this world's affairs ; keeping a good table : a man, neither as friend nor host, to be despised. I offer you food and clothes, and to teach you lessons in the evenings, which will be infinitely more to the purpose for a lad of your stamp than those of all the priests in Europe. I propose no wages, but if ever you take a *thought* to leave me, the door shall be open, and I will give you a hundred francs *to start the world upon*. *In return*, I have an old horse and chaise, which you would very speedily learn to clean and keep in order. Do not *hurry* yourself to answer, and take it or leave it as you judge aright. Only remember this, that I am no sentimentalist or charitable person, but a man who lives rigor-

ously to himself ; and that if I make the proposal, it is for my own ends—it is because I perceive clearly an advantage to myself. And now, reflect.”

—R. L. STEVENSON, *The Treasure of Franchard*.

Translate : Is this the new suit he had made for himself. I insist that you do it. It is nearly two years since I have seen her. Have you anything good to eat? He should have gone there as soon as possible. Altho he may be right I do not think so.

III. *Translate :*

Un ouragan d'acier, de plomb et de cuivre déchire le ciel et foudroie la forêt. Le capitaine Droin est tombé de cheval, sans connaissance, sur un lit de ronces et de bruyère. Quand il revint à lui, le blessé réussit à se traîner jusqu'à Château-Salins, en portant de sa main droite son bras gauche, plus pesant que du fer. Château-Salins ayant été occupé par l'ennemi, Droin s'échappa de l'ambulance sous un déguisement et rejoignit nos lignes à travers les houblonnières. Encore faillit-il être fusillé comme espion par les nôtres. Sa culotte d'officier, gardée sous son pantalon de romanichel, le sauva. Après, ce fut la longue maladie et la vie traînée d'hôpital en hôpital. L'exclusion du service actif, nécessitée par l'inguérissable paralysie du bras, le rejet dans la réserve, c'était pour Droin le pire des malheurs. Réaliser jusqu'au bout de son existence la mission du soldat-poète, n'était-ce pas le plus beau rêve de sa vie? Il s'effondrait à jamais. Terrible épreuve que cette blessure morale, plus cuisante que sa blessure physique, qui cependant lui causa deux ans de torture par le plexus déchiré et le supplice de la polynévrite. Malgré tout, dans ce grand renoncement, l'enthousiasme du poète s'augmenta de toute l'énergie latente du soldat mutilé. Par cette blessure, l'âme de sa patrie, martyre ressuscitée, rentrait en lui, plus forte et plus puissante. Chanter sa renaissance, magnifier ses morts, enflammer ses vivants c'était encore

combattre pour elle. De là le pathétique profond de ce livre. Le poète maintenant ne pense plus à lui-même. Il vit du spectacle qui l'étreint, des douleurs qu'il partage, de la lutte sublime qu'il contemple. Il voit le crêpe de deuil qui couvre la France s'étendre sur d'autres peuples et envahir le firmament. Mais les rubis brûlants de l'héroïsme, les saphirs intenses de l'amour et les diamants du plus pur enthousiasme y étincellent, et, à travers ses plis funèbres, il voit palpiter l'étoile immortelle de la France.

EDOUARD SCHURÉ, *Un Poète Soldat*.

IV. Write a short composition of about one hundred and fifty words on one of the following subjects :

(a) L'influence de l'alliance Franco-Américaine dans la Ligue des Nations. (b) Le 14 juillet en France ; ce qu'il exprime.

FIRST YEAR ITALIAN

I. *Translate into Italian :*

1. Why don't you go there more often? I would like to do so but it rains almost every day. 2. He died at the age of sixty-six, May 7, 1912. 3. He is still very young but he acts like a man. 4. He was returning home when he cut his hand. 5. I gave him five of them, and he kept two. 6. Explain all the lesson to her, and later, to them. 7. Did they have to leave the city, because his father was sick? 8. He might have talked Italian well, if he had stayed there every year. 9. Do you like these cherries? I like the red ones but not the white. 10. He told me what he should have done.

II. Give the Past Subjunctive of *dare*, *sciogliere*, *far*, *andare* ; the Present Indicative of *sparire*, *dovere*, *volere*, *volgere* ; and the Past Absolute of *giungere*, *valere*, *potere*, *solere*, *sapere* ; the Perfect Subjunctive of *giacere* ; *sorgere*, *leggere*, *rimanere*.

III. *Translate into English :*

Venerdì 15 febbrajo 1823 fui a visitare il sepolcro del Tasso e ci piansi. Questo è il primo e l'unico piacere che ho provato in Roma. La strada per andarvi, è lunga, e non si va a quel luogo se non per vedere questo sepolcro ; ma non si potrebbe anche venire dall' America per gustare il piacere delle lagrime lo spazio di due minuti ? E pur certissimo che le immense spese che qui vedo fare non per altro che per procurarsi uno e un altro piacere, sono tutte quante gettate all'aria, perchè in luogo del piacere non s'ottiene altro che noia. Molti provano un sentimento d'indignazione vedendo il cenere del Tasso, coperto e indicato non da altro che da una pietra larga e lunga circa un palmo e mezzo, e posta in un cantoncino d'una chiesuccia. Io non vorrei in nessun modo trovar questo cenere sotto un mausoleo. Tu comprendi la gran folla di affetti che nasce dal considerare il contrasto fra la grandezza del Tasso e l'umiltà della sua sepoltura. Ma tu non puoi avere idea d'un altro contrasto, cioè di quello che prova un occhio avvezzo all'infinita magnificenza e vastità de' monumenti romani, paragonandoli alla piccolezza e nudità di questo sepolcro. Si sente una trista e fremebonda consolazione pensando che questa povertà è pur sufficiente ad interessare e animar la posterità, laddove i superbissimi mausolei, che Roma racchiude, si osservano con perfetta indifferenza per la persona a cui furono innalzati, della quale o non si domanda neppure il nome, o si non domanda non come nome della persona ma del monumento. *Leopardi.*

SECOND YEAR ITALIAN

I. *Translate into English :*

La sera del 10 dicembre 1846 tutta Genova era fiamme di gioia : ma non la città sola, tutti gli Apennini, *il dosso d'Italia*, come Dante li chiama, risplendeano di fuochi : pareva che gli antichi vulcani si fossero risvegliati : era l'avviso,

era la minaccia d'Italia agli stranieri e ai tiranni. E il giovinetto Mameli guardava, guardava col petto anelante quella città accesa, quei monti accesi; e intese che cosa tutto ciò significasse: dal passato indovinò l'avvenire, il prossimo avvenire; nella commemorazione della battaglia popolare di Pre' e di Portoria presenti le cinque giornate di Milano; e in un di quei momenti che Platone avrebbe chiamato di "furore poetico" gittò ai venti d'Italia il canto *Dio e popolo*, il canto precursore del quarantotto e del quarantanove.

Nelle feste che fa il popolo
 Egli accende monti e piani
 Come bocche di vulcani,
 Egli accende le città.
 Poi vi dico in verità,
 Che, se il popolo si desta,
 Dio si mette alla sua testa,
 La sua folgore gli dà.

Con questo canto il diciottenne Mameli si annunciava nel 1846 nuovo poeta della patria. Pochi anni avanti, un grand'uomo, che per l'Italia ha fatto di tutto, anche dei versi, Giuseppe Garibaldi, fissi in lei gli occhi dell'anima dal lontano paese dove egli la vita a lei devota andava pericolando in miracolose avventure di libertà, poetava anche egli così:

Io la vorrei deserta
 El suoi palagi infranti
 Pria che vederla trepida
 Sotta il baston del vandalo.

Così poetava Giuseppe Garibaldi tra i dolori della prigione di Gualaguay. C'è il leone.—*G. Carducci.*

II. *Translate into Italian:*

I have said that the Italian peasant as a rule is a good husband and a good father. He is also almost invariably a good son. From all parts of Italy the emigration from the agricultural classes is very large. In some small towns

and villages every able-bodied man has gone away to America, to the Argentine, or to France and Switzerland. At first sight this emigration would appear to be a serious misfortune to the country—and in a certain measure it is so, since agricultural laborers are yearly becoming more difficult to find, and many parts of Italy are suffering in consequence. On the other hand, large sums of money are sent home by these emigrants, who rarely either settle or invest their earnings in the foreign country to which they have gone. Their first thought is to provide for their parents and relatives left at home ; and as a matter of fact, they rarely remain away more than two years at a time.

—Richard Bagot.

FIRST YEAR SPANISH

1. Oral and aural test.

2. Give a list of :

- a. the personal pronouns used as object of a preposition.
- b. the possessive adjectives.
- c. the demonstrative pronouns.
- d. the days of the week.
- e. the cardinal numerals from one to twenty.

3. Write out :

- a. Present indicative of *hablar, ser, volver, escribir*.
- b. Imperfect indicative of *empezar, vivir*.
- c. Preterite indicative of *contar, pedir, poner*.
- d. Future indicative of *dar, haber*.
- e. Conditional of *tener*.
- f. Present subjunctive of *hacer, sentarse, comer*.

4. Translate :

- (a) Acaba de salir. (b) Hay que verlo. (c) Tengo frío. (d) No me gusta. (e) No hay otro remedio.

5. *Translate :*

Hello, John. How are you?—Very well, thank you. Where is your brother? I want to see him. I have a letter for him.—He went out a moment ago. Give it to me. I'll give it to him.—No; I'll wait for him. When will he come back?—He said he would be here at half past seven.—Good! Have you seen Pedro?—No; he went home last week.—Is that so? I thought he was going to stay here all summer.—His mother is sick and he had to go away.—That's too bad. It's very hot in the city now. Do you know when he will leave for Mexico?—I don't know, but I think it is October 15.

6. *Translate :*

EN EL DESPACHO DE UN MÉDICO.

Doctor—Pase Vd., señora, y tenga la bondad de sentarse.

Señora—¡ Ay ! ¡ Doctor ! ¡ Vd. no sabe cuánto sufro !

D.—Si Vd. quisiera explicarme las circunstancias, sin duda podré curarla.

S.—¡ Ay ! ¡ Estoy disgustada del mundo !

D.—Permítame tomarle el pulso. (*Saca su reloj, le toma el pulso, contando.*) Muy despacio.

S.—Sí, voy de mal en peor.

D.—¿ Desde cuándo está Vd. enferma ?

S.—No puedo recordar exactamente. No puedo descansar bien durante la noche. No me gusta el alimento. No tengo interés en nada.

D.—Vd. no tiene fiebre. Es joven. Los nervios, nada más que los nervios.

S.—Tal vez. Pero ¿ cómo puede Vd. curarme ?

D.—Será muy sencillo. Diviértase Vd.

SECOND YEAR SPANISH

1. Oral and aural test.
2. Give a list of :
 - a. the months of the year.
 - b. the personal pronouns used as object of a verb.
 - c. the common combinations of two object pronouns.
 - d. the principal uses of the subjunctive in subordinate clauses.
 - e. the irregular forms of the verb *sentir*.
3. Write out :
 - a. Present indicative of *ir, acostarse, seguir*.
 - b. Imperfect indicative of *ser, conocer*.
 - c. Preterite indicative of *dar, quedar, andar*.
 - d. Future indicative of *salir*.
 - e. Conditional of *gustar*.
 - f. Present subjunctive of *haber, caer, estar*.
 - g. Past subjunctive (in *-ra*) of *sacar, poder, oír*.
 - h. Synopsis (first person singular of all simple tenses) of *venir, saber, hacer, poner*.
4. Translate :

A DIALOGUE

Carmen. Did you call me, papa ?

Antonio. Yes, I should say I did. Why don't you come sooner when I call you ?

C. Why, papa ; you're as excited as if you were going to get married.

A. No, I'm not. But I'm going to the station to meet a friend and I'll come back with him inside of ten minutes. I want you to have everything ready, in case he comes with me.

C. Yes, papa. It's your old friend, Don Fernando, isn't it ?

A. No, its a young man who wants a position as secretary in my office.

C. Here's your cane.

A. Thank you, girlie. So long.

5. *Translate :*

Figúrese usted que, viendo los libros de la casa, nos encontramos que don Lucio, su padre de usted, tiene más deudas que las que en realidad tiene, e inventamos unos cuantos acreedores. Luego hacemos que uno de estos acreedores fantásticos diga : ¿Cuánto vale la fábrica, cuarenta mil? Me deben treinta mil, pues doy diez mil y me quedo con ella. De estos diez mil, se paga a los acreedores, que cobran el cincuenta, el veinticinco, el diez o el dos por ciento de su crédito. Ellos se quejan, pero como saben que de otra manera no cobrarían nada, lo aceptan.

—Me figuro que todo eso es una sarta de engaños.

—Sí, pero es una solución.

—¿Cree usted? Lo dudo.

—Casi lo podría probar.

—¿Cómo?

—Fácilmente. Si usted acepta la combinación, hay género, mañana mismo, para trabajar dos meses.

—¿Si lo acepto, sí, y de lo contrario, no? Total, que usted aquí es el amo y que nos pone condiciones.

—*Pío Baroja.*

THIRD YEAR SPANISH

1. Oral and aural test.

2. Dése un resumen de alguna novela o comedia española que Vd. ha leído.

3. Escribáse una carta a un amigo (o a una amiga), diciéndole lo que Vd. ha hecho durante el verano pasado.

4. Escribanse cuatro palabras sobre sus estudios de español.

5. *Tradúzcase :*

En el ocaso de una larga y honrada vida de trabajo, D. Benito Pérez Galdós se ha quedado casi ciego. No *puede* ya escribir por sí mismo sus libros ; los dicta. D. Benito Pérez Galdós *es* un anciano alto, recio, un poco encorvado ; *viste* sencillamente ; cubre su cabeza un sombrero blando, redondo, un poco grasiento.

Habla poco el autor de los Episodios ; de cuando en cuando *hace* una pregunta ; escucha atento la charla ; permanece largos ratos en silencio. Sus ojos no brillan ni fulgen con resplandores de vida interna ; su cara no expresa ni alegría, ni tristeza, ni entusiasmo, ni indignación. Lentamente, pausado, con su gabán usado, *va* caminando el ilustre anciano por las calles, entra en el Congreso, escribe unas cartas, se acerca a un corro, escucha en silencio. Ahora, nuestro gran novelista ha perdido la vista. Ya se le *ve* menos por las calles ; sus trabajos—como don Juan Valera en sus últimos años—los dicta a un secretario.

—*Azorín.*

6. Dése una sinopsis (primera persona del singular de todos los tiempos) de todos los verbos escritos en caracteres cursivos en el trozo precedente.

7. *Tradúzcase al español este diálogo :*

Emilia—May I come in ?

Manuel—Come in, come in !

E.—Haven't you read the papers yet ?

M.—Why ?

E.—Because every day they make you cross. You ought to do like me ; I never read them.

M.—You ought to be in Congress.

E.—Of course, I read a part,—the society news and the advertisements.

M.—Yes, the advertisements are worth while.

E.—It must be a good day to-day ; I can tell by looking at your face.

M.—Yes ; nothing's happened.

E.—I'm so glad! . . . Did you read about the French elections?

M.—I thought you said you didn't read the papers. You know more than I do.

E.—No, no. The maid told me.

HISTORY A—ANCIENT HISTORY

PART I

(Required)

1. Sketch the lives of any two of the following persons, selecting one from group (*a*) and one from group (*b*), and show, where possible, in what ways their lives affected their own and later times:

(*a*) Cyrus, Plato, Pericles, Alexander:

(*b*) Pompey, Marcus Aurelius, Vergil, Justinian.

PART II

(Answer one question)

2. Give an outline of the history of Egypt in the Ptolemaic period.

3. Indicate the causes, chief events, and effects of the Second Punic War.

4. Describe the leading systems of writing in vogue in the ancient world.

PART III

(Answer one question)

5. What were the causes of the Peloponnesian War?

6. How did Sparta differ from Athens in its relations to its allies?

7. Sketch the growth of democracy in Rome.

PART IV

(Answer one question)

8. What motives led Rome to go to the assistance of the Mamertines?

9. Indicate how the Roman Empire was Orientalized in the reigns of Diocletian and Constantine.

10. Describe seven important events in the fifth century A. D.

PART V

(Required)

11. Select any two of the following topics and discuss each with some degree of fullness: (a) Troy; (b) The Odyssey; (c) The topography of Athens; (d) Lucretius; (e) The conditions of labor in Greece and Rome; (f) Roman rule in Britain.

PART VI

(Required)

12. Write brief notes on four of the following terms, showing that you have definite knowledge of their origin: dolmen, plebiscite, ostracism, peripatetic, Hellenistic, proconsul, municipium.

PART VII

(Required)

13. On the map:

(a) Shade the land added to the Persian Empire by Cambyses.

(b) Bound the Roman Empire in the reign of Hadrian.

(c) Locate and name seven of the following places: The capital of Egypt in the twelfth dynasty; the greatest colony of the Phoenicians; the capital of Elam; an important Cretan city; the earliest capital of Assyria; the

centre of Hittite power ; the site of the Sphinx ; the greatest Corinthian colony ; the residence of Croesus ; the site of the battle that made Augustus ruler of Egypt ; the capital of the Vandals in Africa ; the site of the last victory of Alcibiades.

MEDIEVAL AND MODERN HISTORY

1. *Where have you studied this subject ?*
2. *How long ?*
3. *What text-book or text-books did you use ?*
4. *What else have you read on this subject ?*

(If you are a candidate for only a half-unit of credit, you should answer only the first half of these questions or only the second half. For those prepared for examination on the Middle Ages from the year 476 the first half ends with Group III ; but for those prepared for examination only from the year 800 or the year 814 the first half begins with Group II and ends with Group IV. Those who wish examination on only the second half should begin with Group IV, but may omit one question in that group.

Candidates for the full unit of credit may omit Group I in case they are not prepared for examination on the period preceding the year 814. In case they are prepared to deal with the questions of Group I they may omit one question of Group II and one question of Group IV.)

Group I

1. Narrate the life and the achievements of Alaric. Of Theodoric.
2. Under what circumstances did the Goths adopt the Christian faith ? The Franks ? The English ? What form of the Christian faith ?

Group II

1. Tell the story of Otto the Great. Of St. Bernard.
2. It has been said by one of the ablest of modern scholars that "the medieval church was a state": what does he mean? Name three of its greatest rulers.

Group III

1. Name and locate on map 45 (to be handed you by the examiner) the leading states of the Spanish peninsula in the fifteenth century. The leading Italian states. The leading German states.

Group IV

1. Narrate the career of Martin Luther. Of Ignatius Loyola. Of Gustavus Adolphus.
2. Tell what you can of the Council of Trent. Of the beginnings of the Dutch republic. Of the provisions of the Peace of Westphalia.

Group V

(Answer two questions)

1. Discuss the causes and results of the English revolution of 1688-9.
2. Discuss briefly the persecution of the Huguenots in France under Louis XIV. Give date of the Revocation of the Edict of Nantes.
3. What were the main causes of the War of the Spanish Succession? Give terms of the Treaty of Utrecht.

Group VI

(Answer two questions)

1. What were the chief changes effected in the political,

social, and economic institutions of France between 1789 and 1792?

2. Write an account of the political unification of Italy in the 19th century.

3. Discuss the influences that have led to the expansion of European political and economic power into Africa and Asia since about 1880.

Group VII

1. Indicate, on map 45, the following :

Malta, Elbe, Versailles, Weser, Brest, Danube, Sardinia, Vienna, Loire, Po, Trentino, Danzig, Roumania, Dalmatia, Fiume, Trieste.

AMERICAN HISTORY AND CIVICS

In what school did you study American History and Civics? How many weeks? How many hours a week? What text-book did you use? What books in addition to the text-book were used?

AMERICAN HISTORY

Group I. (Answer one question.)

1. What bearing did the Protestant Reformation and the subsequent Wars of Religion have upon American colonization?

2. What bearing did the French Revolution have upon American political history between 1793 and 1800? Discuss Washington's proclamation of neutrality of 1793.

Group II. (Answer two questions.)

1. Mention all the important racial elements you can think of (Scotch-Irish, German, etc.) that settled in the

thirteen colonies and say where each settled. State briefly the special significance of any of these elements in the subsequent history of the United States.

2. When did the "Westward Movement" to the Ohio and Mississippi Valleys begin and what are the names of the more important persons connected with the early settlement of that region? What states in the Ohio Valley had entered the Union by 1812?

3. What are the names of the four or five most important Indian chieftains with whom the white people came into collision between 1607 and 1860? Mention briefly the Indian wars associated with these names and write an account of one of the wars.

Group III. (Answer two questions.)

(Answer question 1 and either question 2 or 3.)

1. In the Declaration of Independence occurs the following:

"The history of the present King of Great Britain is a history of repeated injuries and usurpations, all having in direct object the establishment of an absolute tyranny over these States. To prove this, let facts be submitted to a candid world."

What are a half dozen of the facts submitted in the Declaration?

2. Discuss with examples the confusion in the affairs of the States during the period of 1783-1789, with reference to the issuance of paper money, the scarcity of money, the lack of uniformity in levying duties upon imports, and anything else of a specific nature. What was the Shays Rebellion of 1786 and how was it related to this confusion?

3. What were the grounds of objection to the ratification of the Federal Constitution of 1787? What men are noted for their opposition to ratification? What men are noted

for their efforts to secure ratification? What is the Federalist?

Group IV. (Answer one question.)

1. What were the successive events, 1819-1845, that changed Texas from a Spanish possession to a state in the Union?

2. Discuss James K. Polk as an expansionist. What territory was acquired by the United States during his presidency of 1845-1849? What was the Wilmot Proviso of 1846?

CIVICS

(Answer three questions.)

1. What, according to the Federal Constitution, may a State not do?

2. If the admission of Porto Rico as a state in the Union should become a public question what do you think the arguments would be, for and against such admission?

3. Mention the various administrative agencies or boards created by the Federal government for the better prosecution of the recent war. Discuss one of them more fully.

4. Name six powers expressly granted to Congress by the Federal Constitution. What are implied powers? Give examples of the use by Congress of implied powers since the establishment of the government.

5. Write on the origin and growth of political parties before 1801. Does the Federal Constitution say anything about political parties? What is now done by law toward regulating the methods and procedure of political parties?

ENGLISH HISTORY

For $\frac{1}{2}$ unit answer 4 questions in either Group I or Group II. For 1 unit answer 2 questions in each group. Give dates.

Group I

I. Give an account of the life and work of Alfred the Great.

II. What claim had William of Normandy to the English crown? Describe the Norman Conquest and its results.

III. Describe an English manor in the 14th century; its buildings, its people, and the method of agriculture used.

IV. Tell what you know about the guild merchant; the craft guild, and medieval fairs.

V. Give short accounts of (1) Simon de Montfort's parliament, (2) the Lords Ordainers, (3) the Black Death, (4) the Lollards, (5) the Wars of the Roses.

Group II

VI. Describe the causes, course, and results of Elizabeth's war with Spain.

VII. Give an account of (a) the establishment of the Commonwealth and (b) the Revolution of 1688 in England, Scotland, and Ireland.

VIII. Give the chief terms and show the importance of the Reform Bill of 1832.

IX. How did (a) India, (b) Canada, (c) Australia become parts of the British empire?

X. Give short accounts of (1) Court of Star Chamber, (2) Thomas Cromwell, (3) Pride's Purge, (4) the Corn Laws, (5) Daniel O'Connell.

ELEMENTARY ALGEBRA

1. Factor
- (a) $2x^3 - 2axy + 4xy - ax$
 (b) $16x^2 + 55xy - 36y^2$
 (c) $1 - x^2 + 2ax - a^2$

2. Simplify

$$\frac{1 + \frac{2x}{2x-1}}{\frac{x^3}{1-2x} + x} - \frac{3}{x-1}$$

3. Solve the following equation for x , and test one of your solutions by substituting in the original equation :

$$\frac{1}{x} - \frac{1}{x-4} = 4$$

4. Solve the following pair of equations for x and y :

$$\begin{cases} 3x^2 + y = 7 \\ 2x + 3y = 10 \end{cases}$$

5. A can do a piece of work in 5 days, and it takes B three times as long as it takes the two of them together to do it. How long does it take B alone?

6. What is the value of $4^{\frac{3}{x}} - x^{1-x} + 13^{x-2}$ if $x = 2$?

7. If a man had \$4.15 in dimes, quarters, and half-dollars and if the total number of coins was 11, and there were 8 more quarters than dimes, how many coins would there be of each kind? How do you explain your result?

INTERMEDIATE ALGEBRA

1. Find and simplify the 6th and 7th terms of the expansion of $\left(x^2 + \frac{12}{x}\right)^9$. What must be the value of x in order that these terms should be equal?

2. How many solutions can you find for the equation

$$\sqrt{3-x} + 3x + 5 = 0?$$

3. Find the value of

$$\frac{x + 4\sqrt{x-1}}{\sqrt{2x-3}} + \sqrt{3x+1} \quad \text{when } x = -1.$$

4. The library clock strikes eight preliminary strokes at the even hour, and then the number indicating the hour.

It also strikes twice at each quarter hour, four times at the half, and six times at the three-quarters. How many times does it strike between 9:10 a.m. and 9:20 p.m.?

5. Solve for x and y
$$\begin{cases} x^2 - xy = 6 \\ x^2 + 3y^2 = 7 \end{cases}$$

6. A leaves P going to Q at the same time that B leaves Q going to P. From the time they meet it takes A $6\frac{2}{3}$ hours to finish the trip to Q, and B 15 hours to reach P. Find the rate of each if the distance from P to Q is 300 miles.

ELEMENTARY AND INTERMEDIATE ALGEBRA

1. Factor (a) $2x^2 - 2ay + 4xy - ax$;
 (b) $16x^2 + 55xy - 36y^2$;
 (c) $1 - x^2 + 2ax - a^2$.

2. Solve the following pair of equations for x and y :

$$\left. \begin{array}{l} 3x^2 + y = 7 \\ 2x + 3y = 10 \end{array} \right\}$$

3. A can do a piece of work in 5 days, and it takes B three times as long as it takes the two of them together to do it. How long does it take B alone?

4. If a man had \$4.15 in dimes, quarters, and half-dollars and the total number of coins was 11, and there were 8 more quarters than dimes, how many coins would there be of each kind? How do you explain your result?

5. How many solutions can you find for the equation

$$\sqrt{3-x} + 3x + 5 = 0?$$

6. Find in simplest form the value of

$$\frac{x + 4\sqrt{x-1}}{\sqrt{2x-3}} + \sqrt{3x+1}.$$

7. A leaves P, going to Q, at the same time that B leaves Q, going to P. From the time they meet it takes A $6\frac{2}{3}$ hours to finish the trip to Q, and B 15 hours to reach P. Find the rate of each, if the distance from P to Q is 300 miles.

ADVANCED ALGEBRA

1. How many committees of 5 men can be selected from a body of 10 men three of whom can serve as chairman but can serve in no other capacity?

2. In the following equations, x, y, z are the unknowns.

$$\left. \begin{array}{rcl} 2x + 3y & = & 6 \\ by + z & = & 4 \\ x & - & z = 2 \end{array} \right\}$$

Solve by determinants for y only, and simplify.

For what value of b will the equations have no common solution?

3. Prove by mathematical induction

$$2^1 + 2^2 + 2^3 + \dots + 2^n = 2^{n+1} - 2.$$

4. If the roots of the equation

$$x^3 + 5x^2 + 8x + 3 = 0$$

are a, b, c , find an equation whose roots are $3a, 3b, 3c$. Find another equation whose roots are $3a+2, 3b+2, 3c+2$.

5. For what values of k will the equations

$$\left. \begin{array}{l} y = x + k \\ xy + 1 = 0 \end{array} \right\}$$

have solutions which are: (a) real and unequal; (b) real and equal; (c) imaginary.

6. Find to three figures a positive real root of the equation

$$x^4 + x^3 - 7x^2 - 8x - 8 = 0.$$

PLANE GEOMETRY

1. The radius of a circle perpendicular to a chord bisects the chord and the arc subtended by it.

2. Let ABC be a right triangle with the right angle at C and leg AC shorter than the leg BC ; and let CD be the altitude from C upon the hypotenuse and E the middle point of the hypotenuse. Prove that angle $ACD =$ angle BCE .

3. If two chords intersect within a circle, the product of the segments of one is equal to the product of the segments of the other.

4. The parallel sides of a trapezoid are 6" and 10" respectively, and the other two sides are each 7". Find the area.

5. The areas of two similar triangles are to each other as the squares of any two homologous sides.

6. Find the area of the segment of a circle of radius 6" cut off by a chord 6" long.

7. A square is constructed upon the hypotenuse of a right triangle. Prove that the line joining the center of the square to the vertex of the right angle bisects the right angle.

SOLID GEOMETRY

I. The volume of a triangular pyramid is one-third the product of the area of its base and its altitude.

II. The sum of the face angles of a convex polyhedral angle is less than 360° .

III. What is the locus of points within a trihedral angle and equidistant from the faces of the angle? Prove your answer correct.

IV. If the earth were a true sphere of radius 4000 mi. and a state with an area of 50,000 square miles were in the shape of an equilateral spherical triangle, how large would the angles of the triangle be?

V. State a theorem giving the volume of a frustum of a triangular pyramid in terms of its altitude and the areas of its bases. *Prove* the theorem.

VI. If each of two parallel planes are cut by a third plane the lines of intersection are parallel.

VII. A cube is inscribed in a sphere whose radius is two feet. Find the length of the edge of the cube.

PLANE TRIGONOMETRY

1. Prove the identity

$$\cot A - \cot 2A = \csc 2A.$$

2. Solve for x

$$\cot^{-1} x + \sin^{-1} \frac{1}{\sqrt{5}} = \frac{\pi}{4}.$$

3. Given $a = .235$

$$b = .189$$

$$B = 36^\circ 28' 20''.$$

Solve completely and check.

4. A railway train is traveling along a circular curve of $\frac{1}{3}$ mile radius at the rate of 25 miles an hour. Through what angle (in circular measure) will it turn in half a minute?

5. Derive the formula for $\sin(A + B)$, using a figure in which A and B are angles between zero and 90° and $A + B$ is greater than 90° .

6. Find $\cos 105^\circ$ without using tables.

7. Find all positive values of x less than 360° for which

$$\sin x + 2 \cos^2 x = 2.$$

SPHERICAL TRIGONOMETRY

1. If the three sides of a spherical triangle on the earth are 1200 miles, 1500 miles, and 1700 miles, find the angles and the area (in square miles) of the triangle. (Use 4000 miles for the radius of the earth.)

2. Derive the law of sines for an oblique spherical triangle.

3. The captain of a steamer which is in long. 130° E., lat. 5° N. wishes to sail on the shortest route to get to a point on the equator in long. 90° W. In what direction should he start?

4. The R-34 sailed from near Edinburgh (lat. $55^{\circ} 55' 30''$ N., long. $3^{\circ} 10' 33''$ W.) to near N. Y. (lat. $40^{\circ} 45' 23''$ N., long. $73^{\circ} 58' 26''$ W.). If the radius of the earth were 4000 mi. what is the shortest distance the "Blimp" could have traveled?

5. If A, B, C are the angles of a spherical triangle right-angled at C and if the sides opposite A, B, C are a, b, c respectively, prove

$$\sin a = \sin A \sin c \quad \text{and} \\ \cos c = \cot A \cot B.$$

PLANE AND SPHERICAL TRIGONOMETRY

1. Prove the identity

$$\cot A - \cot 2A = \csc 2A.$$

2. Solve for x

$$\cot^{-1} x + \sin^{-1} \frac{1}{\sqrt{5}} = \frac{\pi}{4}.$$

3. A railway train is traveling along a circular curve of $\frac{1}{3}$ mi. radius at the rate of 25 mi. an hour. Through what angle (in circular measure) will it turn in half a minute?

4. Find all the positive values of x less than 360° for which

$$\sin x + 2 \cos^2 x = 2.$$

5. If the three sides of a spherical triangle on the earth are 1200 mi., 1500 mi., and 1700 mi., find the angles and the area (in square miles) of the triangle. (Use 4000 mi. for the radius of the earth.)

6. The captain of a steamer which is in long. 130° E., lat. 5° N. wishes to sail on the shortest route to get to a point on the equator in long. 90° W. In what direction should he start?

7. If A, B, C , are the angles of a spherical triangle right angled at C and if the sides opposite A, B, C are a, b, c , respectively, prove

$$\begin{aligned}\sin a &= \sin A \sin c, \quad \text{and} \\ \cos c &= \cot A \cot B.\end{aligned}$$

PHYSICS

Group A

Answer two questions from this group.

1. What is meant by the specific gravity of a substance? Describe a laboratory experiment to determine the specific gravity of some substance. Indicate how the observed data should be used to calculate the specific gravity.

2. A uniform rod AB , 8 ft. long and weighing 20 lbs., has a 50 lb. weight attached 3 ft. from the end A . The rod with weight is carried by two men, one at 1 ft. from end A and the other at 2 ft. from end B . How much does each man carry when the rod is held in a horizontal position?

3. Explain why a man is more likely to be injured if he falls from a certain height to a cement side walk than if he falls the same distance upon a pile of saw dust. What is the efficiency of an inclined plane 24 ft. long and 10 ft. high, when a force of 200 lbs. parallel to the incline is required to draw a 400 pound weight up the incline?

Group B.

Answer three questions from this group.

4. Describe an experiment to measure the length of a sound wave. What effect does a rise in temperature have on the pitch of an organ pipe of the flute type? Account for this effect.

5. Describe the construction of some form of photometer and tell how you would use it to measure the candle power of some source. How will the illumination at a distance of 6 ft. compare with that from the same light at a distance of 24 ft.?

6. Explain why warm water placed in an open dish will cool to a temperature below that of its surroundings. Explain how the construction of a thermos bottle aids in maintaining its contents at a temperature different from that of its outside surroundings.

7. How would you proceed to determine experimentally whether lead or copper has the larger specific heat?

Group C.

Answer two questions from this group.

8. What is the difference between an electric charge and an electric current? Describe some method for determining (a) the sign of electrification of a charged body, (b) the direction of a current in a wire.

9. Sketch the magnetic field (a) around a long straight wire carrying current, indicating the direction of both the

field and the current (*b*) around two straight bar magnets placed with their axes in the same straight line but with the *N* poles near each other. (*c*) around a spiral coil carrying current.

10. What are the essential parts of a direct current dynamo? If such a dynamo has an E.M.F. of 250 volts and a resistance of .4 ohm, what current will it furnish when connected to a circuit consisting of 5 heating coils connected in parallel, each having a resistance of 123 ohms? What power in watts is supplied to each coil? What would it cost to operate the five coils for 10 hours at 14 cents a kilowatt hour?

CHEMISTRY

(Entrance credit in chemistry does not carry with it University credit in any course in chemistry in Cornell University. Applicants for University credit in Introductory Inorganic Chemistry, Course I, who have received permission from Mr. Hoy, should take the examination for University credit also being held in this room.)

Answer eight questions only.

1. Define and illustrate any ten of the following terms; (*a*) Alkali, (*b*) Oxidation, (*c*) Atomic Weight, (*d*) Electrolyte, (*e*) Water of Crystallization, (*f*) Homologous Series, (*g*) Ionization, (*h*) Saturated Solution, (*i*) Catalytic Agent, (*j*) Propellant, (*k*) Melting Point, (*l*) Salt.

2. Complete and balance any ten of the equations indicated below, using symbols or formulas throughout:

(*a*) calcium carbide + water =

(*b*) carbon monoxide + oxygen (ignited) =

(*c*) bromine + potassium iodide =

(*d*) common salt + silver nitrate =

(*e*) sodium carbonate + hydrochloric acid =

- (f) sodium carbonate + bleaching powder =
- (g) sodium + water =
- (h) concentrated nitric acid + concentrated hydrochloric acid =
- (i) sodium hydroxide + hydrogen sulphide =
- (j) carbon dioxide + slaked lime =
- (k) ammonium nitrate (heated) =
- (l) silicon dioxide + coke (heated in electric furnace) =

3. Describe briefly commercial methods for the preparation of any five of the following products, (a) coke, (b) caustic soda, (c) sulphuric acid, (d) coal gas, (e) nitric acid, (f) ammonia, (g) smokeless powder, (h) quick-lime.

4. Name four constituents of atmospheric air. State what the effect would be upon the various types of living organism of removing in turn each of these constituents from the atmosphere.

How would you proceed to prove that ordinary air is a mixture rather than a compound of its constituents?

5. How would you distinguish, by chemical means, between (a) nitrous oxide and oxygen, (b) liquid bromine and a solution of iodine in water containing potassium iodide, (c) hydrogen gas and hydrogen sulphide gas, (d) platinum wire and a clean bright piece of iron wire, (e) sodium chloride and ammonium chloride?

6. Describe with sketch an experiment by means of which it may be shown that (a) ammonia gas is exceedingly soluble in water, (b) ozone is a stronger oxidizing agent than ordinary oxygen gas, (c) hydrogen is lighter than air, (d) carbon dioxide is formed during the burning of a candle.

7. Assuming that four elements, A , B , C , and D , form compounds of the formulas A_2B , CA_3 , and B_2D , which would be the simplest formula of the compound likely to

be formed between A and D ? If the valence of B is 2, what would be the valences of A , C , and D ?

8. What volume of *air* (in round numbers) would be required for the complete combustion of 100 liters of each of the following gases or vapors?

(a) hydrogen, (b) carbon monoxide, (c) acetylene, (d) benzene vapor, C_6H_6 , (e) pentane vapor, C_5H_{12} .

9. (a) Describe briefly the methods used in the separation of three of the following metals from their ores:

(1) aluminum, (2) iron, (3) copper, (4) zinc, (5) gold.

(b) Describe briefly any one of the methods employed for the purification of water on a large scale for municipal use.

INTRODUCTORY INORGANIC CHEMISTRY

(Entrance credit in Chemistry does not carry with it University credit in any course in Chemistry at Cornell University. Applicants for University credit in Introductory Inorganic Chemistry, Course I, who have received permission from Mr. Hoy, should take the examination given below.)

Answer all of the ten questions.

(Atomic Weights: $H=1$, $C=12$, $N=14$, $O=16$, $K=39$.)

1. Define and illustrate the following terms: (a) catalysis, (b) hydrocarbon, (c) supersaturated solution, (d) titration, (e) dehydration, (f) indicator, (g) hydrolysis, (h) atomic weight, (i) electrolytic dissociation, (j) radioactivity.

2. Complete and balance any ten of the following equations, using formulas or symbols in each case;

(a) sodium carbonate + carbon dioxide + water =

(b) ferriic oxide + carbon (heated) =

(c) copper + concentrated nitric acid =

(d) sodium acetate + sodium hydroxide (heated) =

- (e) silver nitrate + potassium iodide =
- (f) lead acetate + hydrogen sulphide =
- (g) silver sulphate + zinc =
- (h) silicon dioxide + sodium sulphate (heated) =
- (i) ferric chloride + ammonium hydroxide =
- (j) oxalic acid + concentrated sulphuric acid (heated) =

3. Describe (with sketch) lecture (or laboratory) experiments by which it may be shown (a) that the matter contained in a candle is not lost when the candle burns, (b) that hydrogen gas is lighter than air, (c) that air will burn in an atmosphere of coal gas much the same as coal gas burns in an atmosphere of air, (d) that the interior of a flame is not so hot as the outer zones of the flame, (e) that liquid oxygen is a vigorous supporter of combustion.

4. Describe methods for the commercial preparation of any five of the following substances, and state one important use to which each of the five substances is put. (a) sulphuric acid, (b) nitro-cellulose, (c) chlorine gas, (d) sodium carbonate, (e) coke, (f) charcoal, (g) ammonia, (h) ammonium nitrate.

5. (a) How would you explain the fact that solutions of certain salts such as copper sulphate, sodium carbonate, and aluminum sulphate do not show a neutral reaction toward litmus, while solutions of other salts such as sodium chloride and potassium sulphate show a neutral reaction?

(b) On the basis of the theory of electrolytic dissociation explain, as fully as possible, what takes place when a solution of sodium sulphate is electrolyzed between platinum terminals.

6. What is meant by the term Fixation of Nitrogen? Describe as fully as possible three commercial methods that have been successfully operated in connection with the preparation of nitrogen compounds from atmospheric nitrogen. To what chief uses are these compounds put?

7. Give three laboratory methods for the preparation of hydrogen gas. What are the properties of hydrogen? Name the principal advantages and disadvantages of helium as a substitute for hydrogen for the filling of air-ships. Name the other rare gases of the helium group found in the atmosphere in addition to helium itself.

8. (a) What volume of a solution of nitric acid containing 189 grams of the pure acid per liter would just suffice for the neutralization of 10 cc. of a solution of potassium hydroxide containing 56 grams of the alkali per liter?

(b) State the Hypothesis of Avogadro.

On the basis of this generalization calculate the amount of pure oxygen required for the complete combustion of 10 cu. ft. of acetylene gas.

9. How could you prepare, with the aid of suitable reagents,

- (a) quick lime from limestone,
- (b) slaked lime from quick lime,
- (c) sodium hydroxide from slaked lime,
- (d) ammonia from sodium hydroxide,
- (e) nitric acid from ammonia?

10. If two liters of hydrogen, measured at 21°C . and 740 mm. be mixed with 1 liter of oxygen, measured at 18°C . and 750 mm., and the mixture exploded in a suitable container, which of the two gases would be present in excess, and what would be the volume of this gas left uncombined?

BOTANY

1. Describe and illustrate by labeled drawings a typical vegetable cell with all its essential parts.

2. Show, by sketches and description, important stages in the life cycle of (1) an alga, (2) a moss, (3) a fern. Label all parts fully.

3. (A) Name and briefly characterize the great groups of plants.

(B) Name and briefly describe one plant belonging to each of the above mentioned groups.

4. Discuss the progressive development of sex as shown in *Pleurococcus*, *Ulothrix*, *Spirogyra*, and *Vaucheria* or other related algae studied.

5. Sketch a cross section of a dicotyledonous stem. Name and give the functions of all the parts shown.

6. Describe the process of photosynthesis and tell how it may be demonstrated experimentally. Discuss its fundamental importance to plant life.

7. Describe and illustrate a typical flower and give the function of each part.

8. Explain the importance of plant devices for scattering seeds and show the working of two such devices either by drawings or descriptions or both.

9. Give a full discussion of two diseases of plants.

10. Give the life history of a plant from seed to seed. Use diagrams fully to illustrate the account.

ZOOLOGY

For one (1) unit answer all questions. For one-half ($\frac{1}{2}$) unit answer any four questions.

1. (a) What is meant by the expression : "The Cell as a Unit?"

(b) Make and label the important structural parts in a diagram of some protozoan with which you are familiar.

2. (a) Discuss alternation of generations among coelenterates.

(b) Give three examples of members of this phylum.

3. Using the fish as a type discuss its structure under the following headings : (a) appendages, (b) organs of respira-

tion, (*c*) divisions of digestive system, (*d*) organs concerned in the circulation of the blood, and (*e*) the type of and parts of skeleton.

4. From the standpoints of locomotion and respiration life on land has presented obstacles to the amphibians. Point out some of these and show how they have been overcome. Wherein does the amphibian circulatory system differ from that of the true fish type?

5. Name three intimate relations of insects to man and discuss any one of these.

6. What are the characteristics which will separate each of the following classes from all others of the sub-phylum vertebrata: Reptilia, Aves and Mammalia?

7. Name nine functions performed by the organs of a higher representative of the metazoan group.

8. Define each of the following terms and mention an animal with which each may properly be associated: (*a*) bilateral symmetry, (*b*) swimmerets, (*c*) regeneration, (*d*) pseudopodia, (*e*) blastula, (*f*) facets, (*g*) exoskeleton, (*r*) carnivorous, (*i*) tracheae, and (*j*) vertebra.

BIOLOGY

State briefly what biological subjects you have studied, with what proportion of recitation and laboratory work and for what periods. Any laboratory books or other work done in such courses may be submitted as supplemental to the answers to be written to the following questions.

Answer any ten questions, two from each group.

Group I

1. Mention two functions of the lymph in man and state how these functions are performed. State the effect of vigorous exercise on the blood.

2. Outline the life history of the mosquito. Describe the

habits of the adults. In what way is the mosquito related to disease in man? Mention a method of mosquito extermination.

3. Give the life-history of a moss. Draw a diagram and name parts shown.

Group II

1. Describe five adaptations for seed dispersal, naming a plant that employs each method described.

2. What is meant by respiration and why is it necessary to the living body? Compare the mode of respiration in ameba, crayfish, perch, frog, and dog.

3. Explain the use of the following terms in biology; transformation, larva, metamorphosis, cell division, fertilization, nucleus.

Group III

1. Mention the different modes of locomotion found among mammals and give an example of each.

2. What are the chief differences in the structure of arteries and veins? What is the principal function of each of the following: White blood corpuscles, red corpuscles, plasma?

3. Define monocotyledon, family, genus, angiosperm. Describe and illustrate the structure of the flower and cluster of one of the compositae.

Group IV

1. Describe in some detail the functions of the liver of man.

2. What are bacteria? Name five human diseases caused by bacteria.

3. Name one beneficial and four injurious insects of New York State. Explain how each is of economic importance.

Group V

1. Distinguish between homology and analogy. Give examples.
2. Diagram some protozoan you have studied, naming the parts. Discuss the importance of protozoa to man.
3. Name five native birds of New York State that are beneficial to man and give the approximate size, color, habitat and economic importance of each.

PHYSICAL GEOGRAPHY

For Full Unit of Credit answer all questions

For $\frac{1}{2}$ Unit of Credit answer questions 1, 4, 5, 8.

1. Write a paragraph on a physical geography topic to which the following terms apply (about one or two pages of your examination book) using each of them in its technical sense: *grade*, *baselevel*, *peneplain*, *dendritic drainage*, *meandering course*, *rounded divides*.

2. Discuss the origin of caves.

3. (a) What part of North America has a climate corresponding to that of northwest Europe (Gt. Britain, Scandinavia)?

(b) How and why does the climate of that part of North America that corresponds in position (with reference to the part of North America that is the answer to (a) of this question) to West Russia and Germany in Europe differ from those areas in temperature and rainfall?

4. (a) Why are the ocean surface waters saltier in the Trade Wind Belts than elsewhere?

(b) Why do the Trade Winds blow so steadily and strongly?

5. (a) Why would a contour interval of 5 feet be suitable for use in mapping a region of low relief (only gentle slopes

and low elevations) and why would one of 50 feet serve better in mapping high and steep mountains? Explain by telling what would result if the 50 foot contour interval were used on the low relief area and the 5 foot on a mountain area.

(b) Make a sketch map, about three inches wide, showing, by contour lines, the form of a river valley having several tributaries.

6. (a) Name some of the topographic forms that you would expect to find in a region covered with heavy glacial deposits.

(b) Tell how you would distinguish between any two of those you have named if encountered in the field (*i. e.* out in the country).

7. What characteristics of bed rock, in the mass, may influence the shape that the surface of the land will develop as a result of weathering or stream erosion. Cite at least one example of a scenic phenomenon due to such characteristics.

8. Define: *Caldera, spit, spring tide, isothermal line, feldspar, cordillera, entrenched meander, solstice.*

BOOKKEEPING

For $\frac{1}{2}$ unit answer any four questions.

For 1 unit answer all questions.

1. a. How are business transactions classified in double entry bookkeeping? Give an example of each class.

b. How are accounts classified in double entry bookkeeping? Give an example of each class.

2. Using a cash book, journal and ledger, enter and post in complete form the following transactions:

Jan. 2. A. B. See, who has not kept a complete set of books, is desirous of doing so. His condition as shown by

a financial statement dated Jan. 1, 1918 is as follows: Merchandise on hand at cost \$1,150; Cash on hand and in bank \$660; a claim against A. D. Steele of \$450; a debt to Jas. T. Wood of \$260.

Jan. 3. Bought for cash office supplies, \$10.00. Bought a Remington typewriter from the Triangle Stationery Co. for \$105.00, paying \$50.00 in cash.

Jan. 4. Bought of I. Sherman & Company, 30 days net, 600lb Rio Coffee at $.11\frac{1}{2}$, \$69.00; 500lb Mixed M. & J. Coffee at \$.25, \$125.00.

Sold William Doyle 5lb U. J. Tea at \$.60, \$3.00; 50lb Sugar at \$.06 $\frac{1}{2}$, \$3.25.

Jan. 9. Received \$250.00 in cash from A. D. Steele.

Jan. 11. Bought a motor truck from the Eclipse Motor Company for \$1,500.00, paying \$500.00 on account, balance in 60 days.

Paid freight bill, \$60.00.

Drew for personal use, \$50.00.

Jan. 14. Borrowed \$500.00 on a note payable in 60 days with interest.

3. Explain the rules for debiting and crediting accounts. Why should debits equal credits?

4. Explain the method of taking a trial balance. What are the uses of a trial balance?

5. The following is a trial balance taken from the books on June 30, 1916. Enter the items in the ledger accounts named, close the ledger, by the journal entry method, using a Trading Account and a Profit and Loss Account, and prepare a financial statement and a profit and loss statement. (Indicate red ink entries by brackets and make free-hand rulings.)

Trial Balance, June 30, 1916

Cash	6,890.00	6,410.00
Accts. Receivable	5,800.00	4,950.00
Mdse. Inventory Jan. 1, 1916	1,500.00	

Furniture & Fixtures	1,000.00	
Real Estate	6,000.00	
Accts. Payable	6,100.00	7,350.00
A. B. See Capital	525.00	8,250.00
Purchases	7,650.00	
Sales		8,990.00
Insurance	75.00	
Repairs	200.00	
Expense	210.00	
	<hr/>	<hr/>
	35,950.00	35,950.00

The charge to insurance is the annual premium on a policy dated Jan. 1, 1916. Included in the charges to expense is a charge for office supplies, \$62. Value of office supplies on hand \$30.

Charge off $2\frac{1}{2}\%$ depreciation on Furniture and Fixtures.

The Inventory of Merchandise on hand June 30, 1916, is \$1200.

6. An accounting system has the following books of original entry: Purchase Book, Sales Book, Cash Book and Journal. Explain and illustrate the use of each book of original entry named.

GENERAL AGRICULTURE

For one-half unit answer five of the first six questions, for one unit answer ten questions.

1. Make a list of all the items that enter into the cost of production of some farm product with which you are familiar.

2. Name any region with which you are familiar and give the usual yields per acre of five crops commonly grown there. Also give the approximate time of planting and approximate time of harvesting each of these crops.

3. Outline a year's work in growing some fruit with which you are familiar, giving location of the plantation and approximate dates and reason for each operation.

4. Name the essential parts of a plow.

5. Outline a five-year rotation that includes a cultivated crop and a hay crop ; a four-year rotation that includes a cereal and a legume.

6. Define sand, loam, and clay soils. Which are popularly known as heavy and which as light soils ?

7. What are the chief differences in conformation between (a) the lard and bacon hog, (b) the beef and dairy cow, (c) the draft and carriage horse ? Name one breed in each type.

8. Arrange in columns under (a) horses, (b) cattle, (c) sheep, (d) swine, the following names of breeds : Ayrshire, Belgian, Berkshire, Chester White, Clydesdale, Dorsett, Galloway, Hackney, Hampshire, Holstein, Jersey, Merino, Morgan, Percheron, Polled Angus, Poland China, Rambouillet, Shorthorn, Shropshire, Southdown, Tamworth, Thoroughbred.

9. Group the following breeds of poultry as to (a) egg production (b) meat production, and (c) general purpose : Black Minorka, Brown Leghorn, Buff Cochin, Light Brahma, Plymouth Rock, Rhode Island Red, White Leghorn.

10. Lay out a home garden 25' x 50' indicating kinds of vegetables, distances between rows and times of planting.

11. Name three benefits derived from each of the following operations or practices : (a) drainage, (b) fall plowing, (c) summer fallowing, (d) cover crops.

12. Name three states in the "cotton belt"; three in which irrigation is extensively practiced ; three important apple states.

DRAWING

Two examinations are given, one in freehand drawing and one in mechanical drawing. Applicants may take either, or by special arrangement may take both. The examination will be given and judged on the assumption that those taking it have had approximately 150 actual hours of instruction and practice for each $\frac{1}{2}$ credit point desired. One (1) point is the maximum credit allowed in the subject. It will be an advantage to candidates taking the examination to present samples of their work, and a teacher's statement showing time and proficiency.

FREEHAND DRAWING

For this examination the applicant is required to make a pencil or charcoal sketch of an object or group of objects. The objects used may be geometrical blocks with straight and curved lines and curved surfaces, simple pieces of pottery, furniture, or casts. The purpose of the examination is to test the ability of the applicant to draw accurately and sympathetically just what he sees. Shading may or may not be required.

MECHANICAL DRAWING

Questions may call for instrumental drawing of geometric constructions, orthographic and isometric projection, oblique section and intersection of solids, surface developments, etc., and working drawings of machine details, as bolts, nuts, pulleys, gears, various simple castings, etc. Data for the problems in any given examination will be furnished in the form of descriptive text, sketches, or photographs with dimensions marked or stated.

MANUAL TRAINING

Examinations will be offered in woodworking, forging, foundry work, and machine work. To satisfy the entrance requirement the applicant must have performed not less than 300 hours of actual work in the subject in which the examination is taken. Candidates must present a teacher's statement of the time actually spent in the work and of the proficiency attained therein.

SCHOLARSHIP EXAMINATION PAPERS

ENGLISH

1. Write a composition of at least 400 words on one of the following subjects :

An American merchant marine.

Outdoor sketching.

War poetry.

Bathing in the surf.

How my reading of magazines has helped me in my work in school.

What I hope to gain by my study of foreign languages.

Everyday applications of chemistry (or physics or biology.)

An eminent American historian (or scientist or discoverer or journalist.)

2. Name some English or American authors who lived and wrote in the reign of Queen Elizabeth, of Queen Anne, of Queen Victoria.

3. Explain any seven of the following terms: *lyric, metaphor, classical, scansion, clause, epigram, alliteration, blank verse, consonant, diction, parable, essay.*

4. In single paragraphs, each about a page in length, discuss any two of the following topics: (a) Burns's conduct under "the dazzling blaze of favour" in Edinburgh.

(b) Johnson's relations with Lord Chesterfield.

(c) Burke's dictum that "Liberty inheres in some sensible object".

(d) Emerson's dictum that "Fine manners show themselves formidable to the uncultivated man".

(e) Washington's suggestions about a foreign policy for America.

5. In single paragraphs, each about a page in length, explain the meaning of any two of the following quotations :

(a) They flash upon that inward eye

Which is the bliss of solitude.—*Wordsworth*.

(b) Our sweetest songs are those that tell of saddest thought.—*Shelley*.

(c) Authority forgets a dying King.—*Tennyson*.

(d) From the great deep to the great deep he goes.

—*Tennyson*.

(e) And join with thee calm Peace and Quiet,

Spare Fast, that oft with gods doth diet.—*Milton*.

(f) Such sights as youthful poets dream

On summer eves by haunted stream.—*Milton*.

(g) Screw your courage to the sticking-place.

—*Shakespeare*.

(h) How many ages hence

Shall this our lofty scene be acted over

In states unborn and accents yet unknown.

—*Shakespeare*.

(i) The time is out of joint : O cursed spite

That ever I was born to set it right.—*Shakespeare*.

GREEK

A

SIGHT TRANSLATION

(Xenophon's *Hellencia* 2, 1, 10-14) :

Τῷ δ' ἐπιόντι ἔτει Λύσανδρος ἀφικόμενος εἰς Ἑφεσον μετεπέμψατο Ἑτεόνικον ἐκ Χίου σὺν ταῖς ναυσὶ καὶ τὰς ἄλλας πάσας συνήθροισεν, εἰ ποῦ τις ἦν, καὶ ταύτας τε ἐπεσκεύαζε καὶ ἄλλας ἐν Ἀντάνδρῳ ἐναυπηγεῖτο, ἐλθὼν δὲ παρὰ Κῦρον χρήματα ἦτει· ὁ δ' αὐτῷ εἶπεν ὅτι τὰ μὲν παρὰ βασιλείως ἀνηλωμένα εἶη καὶ ἔτι πλείω πολλῶ, δεικνύων ὅσα ἕκαστος τῶν ναυάρχων ἔχει, ὁμῶς δ' ἔδωκε. λαβὼν δὲ ὁ Λύσανδρος τὰργύριον ἐπὶ τὰς τριῆρεις τριηράρχους ἐπέστησε καὶ τοῖς ναύταις τὸν ὀφειλόμενον μισθὸν ἀπέδωκε· παρεσκευάζοντο δὲ καὶ οἱ τῶν Ἀθηναίων στρατηγοὶ τὸ ναυτικὸν ἐν τῇ Σάμῳ.

Κῦρος δ' ἐπὶ τούτοις μετεπέμψατο Λύσανδρον, ἐπεὶ αὐτῷ παρὰ τοῦ πατρὸς ἦκεν ἄγγελος λέγων ὅτι ἄρρωστών ἐκείνον καλοῖη, ὃν ἐν Θαιμηίοις τῆς Μηδίας ἐγγὺς Καδουσίῳ, ἐφ' οὗς ἐστράτευσεν ἀφιστῶτας. ἦκοντα δὲ Λύσανδρον οὐκ εἶα ναυμαχεῖν πρὸς Ἀθηναίους, εἰ μὴ πολλῶ πλείους ναὺς ἔχη· εἶναι γὰρ χρήματα πολλὰ καὶ βασιλεῖ καὶ αὐτῷ, ὥστε τούτου ἕνεκεν πολλὰς πληροῦν. παρέδειξε δ' αὐτῷ πάντας τοὺς φόρους τοὺς ἐκ τῶν πόλεων, οἱ αὐτῷ ἴδιοι ἦσαν, καὶ τὰ περιττὰ χρήματα ἔδωκε.

ἐπισκευάζω (line 3) = *to repair*.

ναυπηγέω (3) = *to build ships*.

ἄρρωστέω (11) = *to be ill*.

φόρος (16) = *tribute*.

B

COMPOSITION

The Greeks were brave, but the Persians cowardly. Hence the former won the victory. But owing to the death of Cyrus they were compelled to withdraw as best they could. Under the lead however of Xenophon the most of them escaped.

C

GRAMMAR

1. Write with accents and breathings the following :

ην δ' ἡμεῖς νικησωμεν, ἡμᾶς δει τοὺς ἡμετέροὺς φίλους τούτων ἐγκρατεῖς ποιησαι.

2. Name the following forms : δίδοται, δέδοται, διδῶ, δῶ, ἔστησα, ἔστην, τιθείς, τεθείς, ἀφείναι, ἀπείναι, εἰς, εἷς, ἐν, ἔν, ἦ, ῆ, ῆ, ῆ, εἰ.

3. What is the rule of syntax for ἵνα-clauses? for clauses of result after ὥστε? for ἄν with the infinitive?

4. Distinguish between φαίνομαι with infinitive and φαίνομαι with participle; between μετά with genitive and μετά with accusative.

GERMAN

I

Translate :

1. Ich bekenne, daß mir dieses nicht sehr wahrscheinlich scheint. Eines offenbaren Widerspruchs macht sich ein Aristoteles nicht leicht schuldig. Wo ich dergleichen bei so einem Manne zu finden glaube, setze ich das größere Mißtrauen lieber in meinen, als in seinen Verstand. Ich verdoppele meine Aufmerksamkeit, ich überlese die Stelle zehnmal, und glaube nicht eher, daß er sich widersprochen, als bis ich aus dem ganzen Zusammenhange seines Systems ersehe, wie und wodurch er zu diesem Widerspruche verleitet worden. Finde ich nichts, was ihn dazu verleiten können, was ihm diesen Widerspruch gewissermaßen unvermeidlich machen müssen, so bin ich überzeugt, daß er nur anscheinend ist. Denn sonst würde er dem Verfasser, der seine Materie so oft überdenken müssen, gewiß am ersten aufgefallen sein, und nicht mir ungeübterem Leser, der ich ihn zu meinem Unterrichte in die Hand nehme. Ich bleibe also stehen, verfolge den Faden seiner Gedanken zurück, ponderiere ein jedes Wort, und sage mir immer: Aristoteles kann irren, und hat oft geirrt; aber daß er hier etwas behaupten sollte, wovon er auf der nächsten Seite gerade das Gegenteil behauptet, das kann Aristoteles nicht. Endlich findet sich's auch.

2. Siehst du, mein Freund, so lebt nun deine Sappho!

Für Wohltat Dank, für Liebe Freundlichkeit,
So ward mir's stets im Wechselftausch des Lebens;

Ich war zufrieden, und bin hoch beglückt,

5 Gibst du auch halb nur wieder das Empfangne,

Wenn du dich nicht für übervorteilt hältst. —

Ich hab' gelernt verlieren und entbehren!

Die beiden Eltern sanken früh ins Grab;

Und die Geschwister, nach so mancher Wunde,

10 Die sie dem treuen Schwesterherzen schlugen,

Theils Schicksalslaune und theils eigne Schuld
 Stieß früh sie schon zum Acheron hinunter.
 Ich weiß, wie Undank brennt, wie Falschheit martert.
 Der Freundschaft und der Liebe Täuschungen
 15 Hab' ich in diesem Busen schon empfunden;
 Ich hab' gelernt verlieren und entbehren!
 Nur e i n s verlieren könnt' ich wahrlich nicht:
 Dich, Phaon, deine Freundschaft, deine Liebe !

II

1. Give meaning, principal parts, with auxiliary of perfect tense, and third person singular present indicative (model: *gehen, ging, ist gegangen, er geht*) of: *vorlesen, unterhalten, anbieten, verlesen, vollbringen, verlassen, wiederherstellen, gelingen, beten, aushalten*.

2. Give a synopsis (all tenses) in the third person singular, indicative and subjunctive modes, active and passive voice, of *schlagen*.

3. Give the nominative and genitive singular and the nominative plural with the definite article in each case of: *Staat, Gebäude, Irrtum, Wand, Herz, Drama, Löwe, Präsident, Mineral, Franzose*.

4. How are derivative nouns formed, (a) by internal change, (b) by terminations, (c) by prefixes, (d) by suffixes? Illustrate.

5. What word order is used in sentences or clauses introduced by the following words: *aber, also, dann, obgleich, wenn, wann, denn, nun*? Form German sentences illustrating such use of each.

6. Translate and explain following idioms: *Ich will dich nie im Stiche lassen. Sie hat ihm einen Korb gegeben. Gestern abend wurde getanzt. Etwas auf die leichte Achsel nehmen.*

III

Translate into German :

My friend Carl whom you have met could have visited me this summer had not his younger sister suddenly become so ill. He was staying with his uncle who is said to be one of the richest men in Maine, and he intended to spend the second half of his vacation here in the mountains with me, but, of course, he has been compelled to change all his plans. He wrote me a week ago that his sister had become very much better and that he hoped to return to Cornell on October first. Unless we leave for New York before, which is possible, I might call on him at Ithaca since otherwise we are not likely to meet at all before next year, and perhaps we shall have to wait even longer for if my father should go to England again next spring I shall ask him to take me along this time.

FRENCH

Translate :

A few weeks afterwards, one warm evening in early June as Adams was strolling down to dine under the trees at Armenonville, he learned that Hay was dead. He expected it; on Hay's account, he was even satisfied to have his friend die, as we would all die if we could, in full fame, at home and abroad, universally regretted, and wielding his power to the last. One had seen scores of emperors and heroes fade into cheap obscurity even when alive; and now, one had not that to fear for one's friend. It was not even the suddenness of the shock, or the sense of void, that threw Adams into the depths of Hamlet's Shakespearean silence in the full flare of Paris frivolity in its favorite haunt where worldly vanity reached its most futile climax in human history; it was only the quiet summons to follow—the assent to dismissal; and the last of the three had no motive—no attraction—to carry it on after the others had

gone. Education had ended for all three, and only beyond some remoter horizon could its values be fixed or renewed. Perhaps some day—say 1938, their centenary—they might be allowed to return together for a holiday, to see the mistakes of their own lives made clear in the light of the mistakes of their successors; and perhaps then for the first time since man began his education among the carnivores, they would find a world that sensitive and timid natures could regard without a shudder.

—*The Education of Henry Adams.*

II. *Translate :*

Mazarin avait l'esprit grand, prévoyant, inventif, le sens simple et droit, le caractère plus souple que faible et moins ferme que persévérant. Sa devise était : "Le temps et moi." Il se conduisait non d'après ses affections ou ses répugnances, mais d'après ses calculs. L'ambition l'avait mis au-dessus de l'amour propre, et il était d'avis de laisser dire, pourvu qu'on le laissât faire. Aussi était-il insensible aux injures et n'évitait-il que des échecs. Ses adversaires n'étaient pas même des ennemis pour lui; s'il se croyait faible, il leur cédait sans honte; s'il était puissant, il les emprisonnait sans haine. Richelieu avait tué ceux qui s'opposaient à lui; Mazarin se contenta de les enfermer. Sous lui, l'échafaud fut remplacé par la Bastille. Il jugeait les hommes avec une rare pénétration, mais il tirait son propre jugement que la vie avait déjà prononcé sur eux. Avant d'accorder sa confiance à quelqu'un, il demandait : "Est-il heureux?" Ce n'était point de sa part une aveugle soumission aux chances du sort; pour lui, *être heureux*, signifiait avoir l'esprit qui prépare la fortune et le caractère qui la maîtrise. Il était incapable d'abattement et il avait une constance inouïe, malgré ses variations apparentes. Résister dans certains cas et à certains hommes ne lui paraissait pas de la force, mais de la maladresse. Aussi, ce qu'il cédait, c'était pour le reprendre, et lorsqu'il partait c'était pour revenir. Un de ses plus spirituels

antagonistes, La Rochefoucauld, a dit de lui ; " qu' il avait plus de hardiesse dans le cœur que dans l'esprit, au contraire du cardinal de Richelieu, qui avait l'esprit hardi et le cœur timide." Si le cardinal de Richelieu, qui était sujet à des accès de découragement, était tombé du pouvoir, il n'y serait pas remonté, tandis que Mazarin, deux fois fugitif, ne se laissa jamais abattre, gouverna du lieu de son exil, et vint mourir dans le souverain commandement et dans l'extrême grandeur.

F. MIGNET, *Mémoires historiques*.

III. Write a short composition of about 150 words on one of the following subjects :

- (a) Le soldat américain en France.
- (b) L'étude des langues modernes.

LATIN

1. Write the genitive and ablative singular and the genitive and accusative plural of *socius*, *palus*, *adventus*, *sus* (= swine), *jus*, *pes*, *acies*, *paries*, *nubes*, *miles*, *obses*.
2. Write the accusative singular and the accusative plural, feminine and neuter, of : *is*, *totus*, *vetus*, *suus*, *felix*, *qui*, *quis*, *qualis*, *quidam*.
3. Give the principal parts of : *defendo*, *caedo*, *moveo*, *parco*, *pareo*, *paro*, *pario*, *video*, *divido*, *egredior*.
4. Give a synopsis in the third person singular (active and passive) of : *dedo* and *adfero*.
5. State what case construction, or constructions, are used with : *interest*, *admoneo*, *condemno*, *parco*, *adjuvo*, *avidus*, *obliviscor*, *noceo*, *pudet*, *laedo*, *similis*.
6. Distinguish between the force of the supine *factum* (for instance) and that of the infinitive *facere*, when they are used in the sense of " to do." How does the supine in -u (e. g. *mirabile dictu* = wonderful to tell) differ in meaning from that in -um ?

7. Give the positive, comparative and superlative forms of the adverbs derived from : *audax*, *felix*, *bonus*, *malus*, *celer*, *similis*.

8. *Translate (at sight):*

His rebus cognitis Marcius Rufus quaestor in castris relictus a Curione cohortatur suos ne *animo deficient*. Illi orant et obsecrant ut in *Siciliam navibus* reportentur. Pollicetur *magistrisque* imperat navium ut primo *vespere* omnes naves ad litus adpulsas *habeant*. Sed tantus fuit omnium terror ut alii adesse copias Jubae *dicerent*, alii cum legionibus *instare* Varum jamque se pulverem *venientium* cernere, *quarum rerum* nihil omnino acciderat, alii classem hostium celeriter advolaturam suspicarentur. Itaque perterritis omnibus sibi quisque consulebat.

Account for the case of each italicized noun and pronoun and the mood and tense of each italicized verb in this passage.

9. *Translate :*

Principio muros obscuraque limina portae,
Qua gressum extuleram, repeto, et vestigia retro
Observata sequor per noctem et lumine lustro.
Horror ubique animo, simul ipsa silentia terrent.
Inde domum, si forte pedem—si forte !—tulisset,
Me refero. Irruerant Danaï, et tectum omne tenebant.
Ilicet ignis edax summa ad fastigia vento
Volvitur ; exsuperant flammae, furit aestus ad auras.
Procedo et Priami sedes arcemque reviso.
Et jam porticibus vacuis Junouis asylo
Custodes lecti Phoenix et dirus Ulixes
Praedam asservabant.

From what book of the Aeneid is the above passage taken? Describe briefly the general situation at this point in the Aeneid.—Account for the mood and tense of *tulisset*.—Write out the first three lines, indicating the division into feet and the length of each syllable.

10. *Translate into Latin :*

(a) We know that, if Cicero had judged it best, he would have removed Catiline at the risk of his own life.

(b) If you should ask him why he remains, he would make no answer.

(c) When I came to Geneva, I found the letters which you had sent me.

(d) For four years there was no crime which Catiline had not planned.

(e) Would that we had not returned to the city.

(f) A few days afterward I was ashamed of the deed.

ELEMENTARY MATHEMATICS

1. a) Find the *H. C. F.* of

$$x^6 + y^6, x^4 - x^2 y^2 + y^4 \text{ and } x^8 + x^4 y^4 + y^8.$$

b) Simplify

$$\frac{a}{(a-b)(a-c)} + \frac{b}{(b-c)(b-a)} + \frac{c}{(c-a)(c-q)}.$$

2. Two jugs, *A* and *B*, contain mixtures of alcohol and water. A mixture of 3 parts from *A* and 2 parts from *B* will contain 40% alcohol; a mixture of 1 part from *A* and 2 parts from *B* will contain 32% alcohol. What is the percentage of alcohol in each jug?

3. Solve the simultaneous equations for *x*, *y*, and *z* :

$$\frac{1}{x} + \frac{1}{y} = c, \quad \frac{1}{y} + \frac{1}{z} = a, \quad \frac{1}{z} + \frac{1}{x} = b.$$

4. Solve

$$p(x^2 - x) + q(x^2 + x) = \frac{pq}{p+q}.$$

5. Given any angle *A* and any point *P* within it. Show how to draw a line through *P* to the sides of the angle which shall be bisected at *P*.

6. If in a right triangle the two perpendicular sides are *a* and *b*, compute the altitude upon the hypotenuse.

7. Find the length of the side of a regular octagon inscribed in a circle of radius r .

8. Show how to inscribe a circle in a given sector of a circle.

ADVANCED MATHEMATICS

1. Two bodies, A and B , are moving at constant rates and in the same direction around the circumference of a circle whose length is 25 feet. A makes one circuit in 2 seconds less time than B , and A and B are together once every minute. What are the rates of A and B ?

2. Prove by mathematical induction that the sum of the first n odd numbers is n^2 , that is, prove

$$1 + 3 + 5 + \dots + (2n - 1) = n^2.$$

3. Solve

$$2x - 5 = \frac{\sqrt{x} - \sqrt{x-3}}{\sqrt{x} + \sqrt{x-3}}$$

4. Taking the earth's radius as 3960 miles, through how many miles will a point at 45° north latitude travel as the earth turns through one radian about its axis?

5. Derive the formula for finding the area of a triangle when two sides a and b and the included angle C are given. Apply to finding the area of the triangle of which two sides are $6 + \sqrt{5}$ and $6 - \sqrt{5}$, and the included angle is 30° , without using logarithms.

6. In a trapezoid given the parallel sides a and b and the angles A and B at the extremities of side a . Express the non-parallel sides in terms of a , b , A , B .

7. The radii of the lower and upper bases of the frustum of a right circular cone are R and r respectively. Show that the area of a section midway between the bases is

$$\frac{\pi}{4}(R + r)^2.$$

8. Prove that any section of a tetrahedron made by a plane parallel to two opposite edges is a parallelogram.

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The Register (for the year 1918-1919, published January 1, 1919), price 50 cents.*

Directory of Faculty and Students, First Term, 1919-1920, price 10 cents.*

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Any of the following informational pamphlets will be sent gratis and post-free on request. The date of the last edition of each is given after the title.

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Announcement of the College of Arts and Sciences, May 15, 1919.

Announcement of Sibley College of Mechanical Engineering and the Mechanic Arts, February 15, 1919.

Announcement of the College of Civil Engineering, June 1, 1919.

Announcement of the College of Law, February 1, 1919.

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